

**E. C. ATKINS & CO.,**

(INCORPORATED)

PROPRIETORS OF

**SHEFFIELD SAW WORKS,**

MANUFACTURERS OF

**SAWS AND TOOLS**

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853  
. A64  
1895

**INDIANAPOLIS, IND.**

BRANCH HOUSES:

MEMPHIS, TENN.

CHATTANOOGA, TENN.

MINNEAPOLIS, MINN.

. . . 1895 . . .



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Book A64  
1895

# SAWS AND SAW TOOLS,

WITH SUGGESTIONS TO

•LUMBERMEN AND SAWYERS•

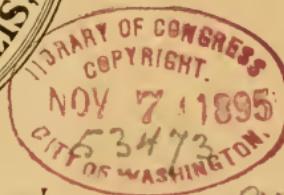
IN THE USE AND CARE OF SAWS.

## E. C. ATKINS & CO.

TRADE

MARK.

15  
421



## •SHEFFIELD SAW WORKS•

FACTORY:

ILLINOIS, SOUTH AND EDDY STREETS.

OFFICE:

206 AND 208 SOUTH ILLINOIS STREET.

### INDIANAPOLIS, IND.

BRANCH HOUSES:

MEMPHIS, TENNESSEE,

CHATTANOOGA, TENNESSEE,

MINNEAPOLIS, MINNESOTA.

ESTABLISHED, 1857.

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OFFICE OF THE

SHEFFIELD SAW WORKS,

E. C. ATKINS & CO., Proprietors.

INDIANAPOLIS, IND., August, 1895.

GENTLEMEN:

We hand you with this revised edition of our Catalogue and Hand Book, "Saws and Saw Tools," which contains revised prices on goods of our manufacture and mill supplies.

The suggestions for the use and care of Saws will be found to be practical, and will often enable the sawyer to overcome difficulties in the running of both Circular and Band Saws, as has been the experience of many sawyers who have made use of the suggestions contained in the book. But when a saw has become badly out of condition by use, it will require the attention of a skilled saw maker, with the proper tools for doing the work and putting the Saw in the best condition for use; in which case, it should be shipped to our factory, or to one of our Branch Houses. Our Branch Houses are located at Minneapolis, Minn., Memphis, Tenn., and Chattanooga, Tenn. At our Branch Houses, we have skilled saw makers, and our repair shops are fitted up with improved appliances and tools, and the repairs will be carefully and promptly done. We also carry a full line of Circular and Band Saws at our Branch Houses.

In reference to the ATKINS' SAWS, we call attention to their high standard of excellence, which has been attained by using the best grades of steel, with our patent method of tempering and skillful workmanship. We propose to maintain this high standard of excellence, and furnish saws that shall receive the favorable commendation in the future that they have in the past.

Soliciting your favors, we are,

Yours respectfully,

E. C. ATKINS & CO.

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## E. C. ATKINS & CO.'S TELEGRAPH CIPHER FOR CIRCULAR SAWS.

### TIME AND MANNER OF SHIPPING.

Express at once.....	STEAMER
Freight at once.....	SCHOONER
Express soon as possible.....	TRAVELER
Freight soon as possible.....	TRADER

### DIAMETER.

Forty-eight inch Saw.....	PARIS
Fifty inch Saw.....	PARK
Fifty-two inch Saw.....	PLEASANT
Fifty-four inch Saw.....	PEKIN
Fifty-six inch Saw.....	PRATT
Fifty-eight inch Saw.....	PORTLAND
Sixty inch Saw.....	POTTER
Sixty-two inch Saw.....	POPLAR
Sixty-four inch Saw.....	PRICE
Sixty-six inch Saw.....	POLAND
Sixty-eight inch Saw.....	PUDDLE
Seventy inch Saw.....	PENDLETON
Seventy-two inch Saw.....	PITTSBURG

### RIGHT OR LEFT HAND.

Right Hand.....	NASHVILLE
Left Hand.....	NEWPORT

### GAUGE.

6 x 6.....	LADOGA
6 x 7.....	LAKE
6 x 8.....	LAMB
7 x 7.....	LANSING
7 x 8.....	LAWRENCE
7 x 9.....	LEBANON
8 x 8.....	LIBERTY
8 x 9.....	LOCKE
8 x 10.....	LIDI
9 x 9.....	LONG
9 x 10.....	LOWELL

### KIND OF TIMBER TO BE SAWED.

Hard Wood.....	EAGLE
Soft Wood.....	EASTON
Norway Pine.....	EDEN
Yellow Pine.....	ELROD
All kinds of Timber.....	ENGLISH

### KIND OF DRESS.

Spring Set.....	DARLING
Spread Set.....	DAISY

### SPECIAL.

Order confirmed by mail.....	BAKER
Answer saying when you can ship.....	CAIRO
If you can't ship at once advise us by wire.....	WANTED

## HOLES.

Standard Holes (see specifications).....	GALLATIN
Mandrel Hole, two inch.....	GEORGE
Mandrel Hole, two inch full.....	GALE
Mandrel Hole, two inch scant.....	GALENA
Mandrel Hole, two and one-sixteenth.....	GALVESTON
Mandrel Hole, two and eighth.....	GARFIELD
Mandrel Hole, two and quarter.....	GARNET
Mandrel Hole, two and half.....	GARVIN
Pin Holes, one-half inch.....	GEM
Pin Holes, five-eighths.....	GREGORY
Pin Holes, three-quarters.....	GERMAN
Pin Holes, as per template mailed,.....	GALL
Pin Holes, 3 in. from center to center.....	GIBSON
Pin Holes, 3½ in. from center to center.....	GILMAN
Pin Holes, 3¾ in. from center to center.....	GLENDALE
Pin Holes, 3¾ in. from center to center.....	GOLD
Pin Holes, 4 in. from center to center.....	GRAND
Pin Holes, 4¼ in. from center to center.....	GOSPORT
Pin Holes, 4½ in. from center to center.....	GRAFTON
Pin Holes, 4¾ in. from center to center.....	GRAVEL

## NUMBER OF TEETH.

30 Teeth .....	HOBBS	72 Teeth.....	HANG
32 Teeth.....	HOBOKEN	74 Teeth.....	HELLO
34 Teeth.....	HOLTON	76 Teeth.....	HANFIELD
36 Teeth.....	HONEY	78 Teeth.....	HAMILTON
38 Teeth.....	HOOKER	80 Teeth.....	HAMMOND
40 Teeth.....	HOPE	30 to 36 Teeth.....	HADLEY
42 Teeth.....	HORACE	32 to 38 Teeth.....	HALEY
44 Teeth.....	HORNER	34 to 40 Teeth.....	HALL
46 Teeth.....	HOVEY	36 to 42 Teeth.....	HAMLET
48 Teeth.....	HOWARD	38 to 44 Teeth.....	HANCOCK
50 Teeth.....	HUDSON	40 to 46 Teeth.....	HANNAH
52 Teeth.....	HOWLAND	42 to 48 Teeth.....	HANOVER
54 Teeth.....	HUNT	44 to 50 Teeth.....	HARMONY
56 Teeth.....	HALSEY	46 to 52 Teeth.....	HARPER
58 Teeth.....	HURON	48 to 54 Teeth.....	HARTFORD
60 Teeth.....	HUBBARD	50 to 56 Teeth.....	HARRIS
62 Teeth.....	HAY	52 to 58 Teeth.....	HATFIELD
64 Teeth.....	HIGH	54 to 60 Teeth.....	HAWKINS
66 Teeth.....	HIP	56 to 62 Teeth.....	HEBRON
68 Teeth.....	HOMER	58 to 64 Teeth.....	HECLA
70 Teeth.....	HURLBURT	60 to 66 Teeth.....	HECTOR

## SPEED OF SAW.

Speed 400.....	FAIR	Speed 675.....	FOX
Speed 425.....	FLINT	Speed 700.....	FULTON
Speed 450.....	FISH	Speed 725.....	FRANK
Speed 475.....	FLAT	Speed 750.....	FRIEND
Speed 500.....	FLORIDA	Speed 775.....	FELLOW
Speed 525.....	FLORENCE	Speed 800.....	FARMER
Speed 550.....	FOREST	Speed 825.....	FINLEY
Speed 575.....	FORT	Speed 850.....	FALLS
Speed 600.....	FRENCH	Speed 875.....	FAST
Speed 625.....	FRANKLIN	Speed 900.....	FURIOUS
Speed 650.....	REEDOM		

## FEED.

1 inch Feed.....	BARREN	5 inch Feed.....	BEDFORD
1½ inch Feed.....	BASCOM	6 inch Feed.....	BEACH
2 inch Feed.....	BATH	7 inch Feed.....	BELDEN
2½ inch Feed.....	BATTERY	8 inch Feed.....	BELMORE
3 inch Feed.....	BATTLE	9 inch Feed.....	BELMONT
3½ inch Feed.....	BEACON	10 inch Feed.....	BENGAL
4 inch Feed.....	BEAN	11 inch Feed.....	BENTON
4½ inch Feed.....	BEAVER	12 inch Feed.....	BERLIN

## TERMS OF WARRANTY.

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### CIRCULAR SAWS.

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Each Saw is warranted free from flaws and seams, and practically true. Any Saw failing to run well will be rehammered free of charge, if immediately returned; or if found defective in metal or temper, within thirty days from delivery, a new one will be given in exchange.

Saws cracked or broken, as the result of filing square corners in the gullet of the tooth, as is frequently the case, or from using a cold-chisel or punch in retoothing, are not covered by our warranty.

Any alteration in the holes of Circular Saws, by filing, reaming, or otherwise, will generally spring the Saw. When such alteration is made, the Saw will not be subject to the above warranty.

No warranty upon Saws used in frozen timber.

The name of "E. C. Atkins & Co." on a Saw is an assurance to the buyer of its superior quality and reliability, and no further guarantee is needed.

E. C. ATKINS & CO.

## PRACTICAL SUGGESTIONS, STANDARD RULES, ETC., CONCERNING THE USE AND CARE OF CIRCULAR SAWS.

### HANGING THE SAW

Saws of our manufacture, unless they are ordered to be put up straight, are marked near the center with the words "LOG SIDE." Before placing the new saw upon the mandrel, be sure that the side so marked comes next to the log on your mill; if it does not, it should be sent to the factory to be hammered so as to suit your mill.

Be sure that the mandrel is level, and that the saw when placed on it and the flanges screwed up, is perfectly plumb. The holes in the saw should be an easy fit on the mandrel and lug pins.

Be sure that it does not bind on the mandrel or the pins. If it does, the least warmth of the mandrel will be sure to cause it to expand, bind and spring the saw.

It should slip on readily, neither tight nor loose.

Saws are often pronounced crooked when the fault is in the collars.

If the position or "dish" of the saw is changed in the least by tightening the collars for work, the defect should be remedied at once. Put a straight-edge on the log side of the saw, and ascertain whether the fault is in the saw or in the collars.

Thin saws, and saws of high speed, are put up very open so that the center will pull through, and the saw, when hung on the mandrel, may show concave or convex on the log side when standing still, but when run up to the speed for which it is hammered, it should straighten up and be flat, or nearly so, on the log side.

When hung upon the mandrel and the collars tightened, the saw should be perfectly round, so that every tooth will do its proper work. Should the saw be too crowning or too dishing on the log side, the difficulty may be overcome by papering between the saw and the collars. If the saw is dished on the log side, cut a ring of

paper of the size of the collar and about three-fourths inch wide; wet it with oil and lay it on the loose collar.

Cut a smaller ring of paper of the same width to fit the mandrel, and place it on the mandrel against the fast collar. If one thickness of paper is not sufficient, add another ring, and so on until the saw, when clamped between the flanges, is brought to the proper position.

Should the saw be too crowning on the log side, reverse the position of the paper rings, placing the large one next the fast collar and the smaller one next the loose collar. Letter paper for making the rings is preferable, being solid and firm.

#### LINING THE SAW WITH THE TRACK.

Take all the end play out of the mandrel. Run the carriage up past the saw so that one of the head-blocks will be opposite the center of the saw. Fasten a square piece of board on the head-block and let the end of the board touch the face of the saw at its center. Then run the carriage back from the front of the saw 20 feet. Draw a line from the end of the board past the saw parallel with the track. The line where it passes the center of the saw should be from one-eighth inch to one-fourth inch from the face of the saw. This would show the track at 20 feet from the center of the saw on a line with the saw, and that the track at the center of the saw, if put down right, is one-eighth inch to one-fourth inch further off from the saw than at 20 feet distant.

Some saws require more inclination toward the track than others, and the track being adjusted properly, any small variation required may be accomplished by means of the set screws on the box.

The track should be solid, level and perfectly straight, and the saw frame firmly anchored. Trouble is often caused by a neglect to keep the track in order, and it should be examined frequently.

#### LEAD.

We have shown that the lead of the saw to the log may be adjusted by its position to the track. It may be held to its work in the

log by beveled filing on the back of the tooth. The teeth, if properly filed, should always be perfectly square on the front side, but if the saw tends to lead in or out of the log it may be held to the proper position by beveling the back side of the tooth at the point. If the front of the tooth is filed perfectly square and the teeth are beveled on the back, on the board side, this will lead your saw into the log or, if you bevel on the log side, it will lead the saw out of the log.

Should the saw lead in and out, or what is called "snaky," it is evident that it needs hammering, that the rim is too large for the center and the saw needs opening out at the center. Such a saw may be run warm at the center and the difficulty overcome in this way; otherwise it will require hammering.

#### POINTS TO BE OBSERVED.

See that the track is solid, level and straight, that saw shaft is level and the saw hangs plumb; that it goes on the mandrel easy, is a close fit, and that the lug pins have a bearing; that the tight collar is a little concave and the loose one perfectly flat; that the saw is straight on the log side when the collars are screwed up and the saw run up to the required speed; that it is in line with the carriage and a little inclined toward the log; that the saw is perfectly round and has throat-room sufficient for the dust; that the teeth are not too high on the back side; that the teeth are filed perfectly square on the front side, and swaged sufficient to give clearance for the body of the saw; that there is very little, if any, end play to the mandrel; that the guides are perfectly adjusted when the saw is standing still.

Do not try to lead the saw with the guide pins, but lead the saw by adjusting it properly to the track and by proper filing. If you wish the saw to run warm at the center, you can create friction by reducing the set or spread of the teeth. If the saw heats too much in the center give it a little more set. If the saw heats on the rim it is because the teeth have not sufficient throat-room for clearance of the dust, or the backs of the teeth are too high. If the saw is too tight

on the rim increase the motion if possible, and be sure to keep it cool in the center.

The saw should be run at uniform speed both in and out of the cut.

If the guide pins are run too close, the saw will heat at the rim and run "snaky." If gum is allowed to collect on the sides of the saw, the rim will heat from the friction.

#### **TRUEING SAW ON THE MANDREL.**

If the saw is in proper tension and does not run true, take all the end play out of the mandrel; rest a small piece of board with one end sharpened, upon the saw frame; hold the sharpened end against the board side of the saw near the rim. Mark with chalk the high places or those that touch, and on the opposite side the hollow places or those which do not touch the board. Turn the saw so as to bring the high points directly over the arbor, and, with a sharp pull, bend the points which are high on the board side toward you, and with a sharp push bend the parts which are high on the log side from you. By testing and bending in this way you may make a saw run perfectly true on the mandrel which has been sprung or does not from any cause run true.

#### **CAUSES FOR HEATING ON THE RIM.**

Guide pins set too close.

Teeth have not enough spread or set.

Backs of the teeth too high.

Not throat-room enough for saw dust.

Accumulation of gum on the teeth.

*Saw not open enough in the body for the speed.*

#### **CAUSES OF HEATING AT CENTER.**

Teeth have not enough spread or set.

Saw lined too much out of log.

Mandrel runs too warm.

Saw too open in the body or center for the speed.

Speed not sufficient to expand the rim.

Saw dished too much to or from the log.

## HAMMERING AND TENSION.

All mechanical arts require a skill acquired by long practice for their perfect execution. No art is more difficult of acquirement than that of saw making. All the conditions under which a saw has to be run, need to be exactly known and provided for in the construction and final finishing of the saw.

For the benefit of our patrons and sawyers using our saws, we take pleasure in explaining the general principles involved in the hammering and tension of circular saws. The practice taught by masters of the art thirty years ago, when saws of small diameter only were used, was that a circular saw to do proper work should be left firm between the center and the rim, and open as to its whole diameter, whereas experience has shown, and it is the practice of the best artists, to open out the body of the saw between the center and the rim to the extent required for the speed the saw is to run.

Very high speed and thin saws require that the saw be opened out until it takes a strong push or pull to throw the center either way when the saw is standing upon the floor. When the saw is in proper tension and is shaken or pulled through, the body only of the saw should vibrate, while the rim should be nearly or quite steady.

Gumming a circular saw, or the alternate heating and cooling of the rim will permanently expand a saw at the rim, and in consequence it will become too stiff in the center or body of the saw and run "snaky"; a few strokes of a round face hammer on both sides of the saw at the proper place will restore the tension. (See illustration, Fig. 1.) The portion of the saw to be hammered being indicated by the dotted lines. The same treatment is required if the saw is put up for too low speed. The rule is that it must be more open or limber in the body of the saw for fast speed than for slow speed; for hard than for soft wood.

When the saw is standing on the floor and shaken with the hand and the center and rim both vibrate, the saw requires more hammer

ing on the line nearest the rim (Fig. 1). When opening out the body of the saw, do not hammer within 6 inches to 10 inches of the center.

Observe the motion of the saw when on the mandrel and running up to speed; if it runs wavy on the rim it needs opening out in the body of the saw on the dotted lines (Fig. 1). If it runs steady and true out of the log, it is the fault of the hanging, lining, fitting or management if it does not run steady and true in the log. The dotted lines (Fig. 1) indicate where the face of the saw must be hammered on both sides with the round face hammer to open the body of the saw for high speed, or when it runs wavy on the rim in full motion. Fig. 2 illustrates examination of the saw with the straight-edge in adjusting the tension. The center of the saw resting on the anvil, the rim back of the anvil supported on a narrow bench extending from the anvil to the wall, and the opposite point raised with the hand, the straight-edge extending from the center toward the rim of the saw.

If the saw is properly opened in the body the portions indicated by the dotted lines in Fig. 1 will drop away from the straight-edge (Fig. 2) equally all around the saw. To equalize the tension, the parts which drop least require hammering until the tension is equalized and all parts indicated by the dotted lines drop equally all around the saw. The center line should drop a trifle more than the others.

Hammering to take out lumps should always be done on the high side or on that point which touches the straight-edge. Lumps or ridges upon or near the rim may be found with the straight-edge by examining that part of the saw, with the center of the saw resting on the anvil; but lumps or ridges in the body of the saw should be found with the saw standing upon the floor perfectly perpendicular (Figs. 3 and 4). Mark with chalk the high points which touch the straight-edge on either side of the saw, and hammer where marked,

either on a slightly oval wooden block or an anvil. (The anvil is preferred by practical saw makers.)

If the anvil is used, allowance must be made for change in tension produced by the blow of the hammer, as every blow upon the anvil stretches and opens the saw at the point hammered. If the end of a wooden block is used in taking out lumps, the tension will not be affected. The tension must be adjusted by hammering on the anvil. Lumps usually run in ridges and should be hammered out with a cross pene hammer, the pene following the ridge in the direction which it runs as discovered with the straight-edge. Round lumps may be hammered down with the round face hammer, or with the cross pene hammer by changing the hammer over between each blow so that the strokes cross each other. The strokes should be directly on the lump or ridge.

The adjustment of tension is preferably done with a hammer having a slightly oval and perfectly round face. Figures 3 and 4 illustrate the examination of the saw for lumps and ridges when standing on the floor. Move the level across the saw from *a* to *b* (Fig. 3) all over the surface on both sides of the saw, rolling the saw on the floor while making the examination, and mark the points which touch the straight-edge, the lumps *x* and the ridges —.

Test the saw with the straight-edge between the center and edge from *c* to *d* (Fig. 4) all around the saw, marking the lumps and ridges as before. Hammer lightly on the points marked. After leveling, examine the tension; if it remains as before, your saw is ready to go on to the mandrel for test, but if not, adjust the tension again with the round face hammer; then level it again, and, if necessary, adjust again for tension, and so on until the saw is perfect. If the saw has an even tension, put it on the mandrel and run it up to speed. If it runs steady and true, it is ready for fitting, and, when properly hung and fitted, it will stand up to its work.

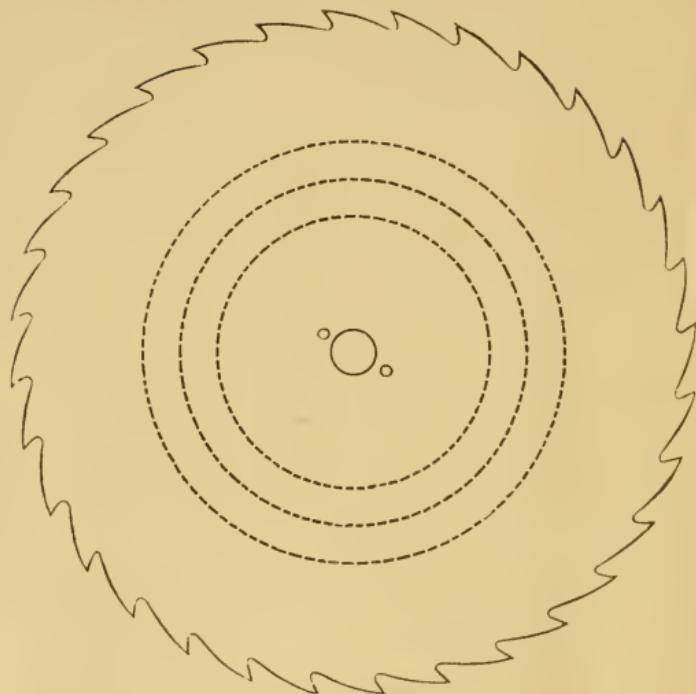
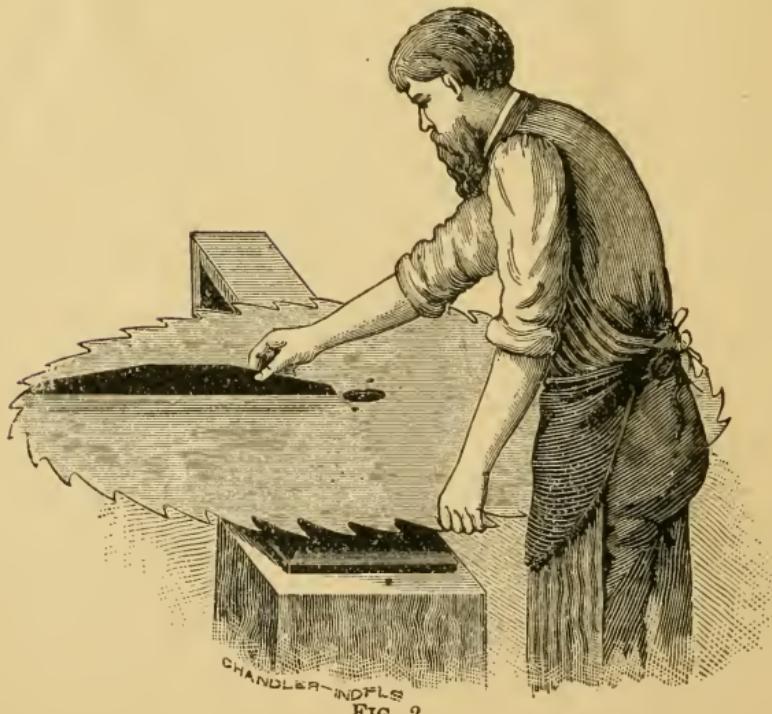


FIG. 1.



CHANDLER - INDFLS

FIG. 2.

FIG. 3.

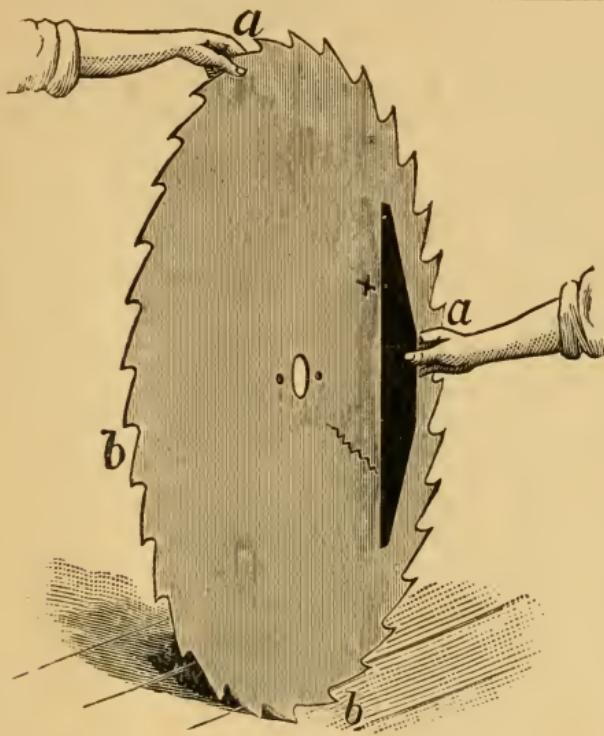
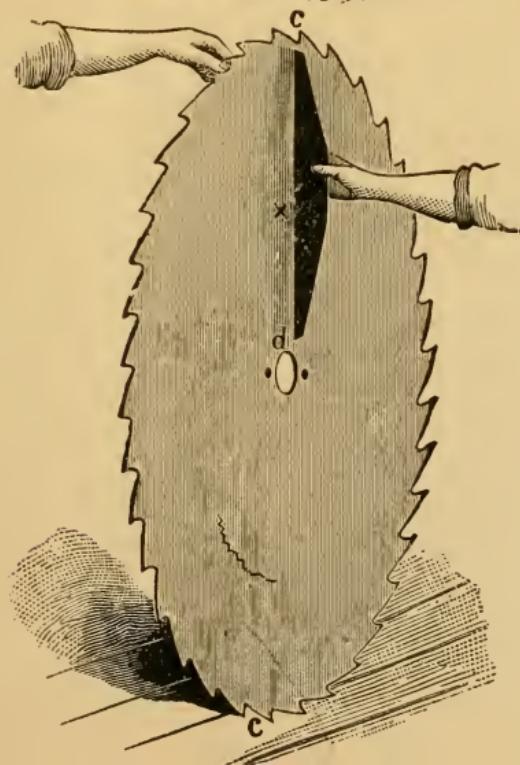


FIG. 4



## INSTRUCTIONS—INSERTED TOOTH SAWS.

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### HOLDERS AND BITS.

Keep the extreme point of the bit wider than any other part of the swaged portion, thus—



FIG. 5.

Never side-file so as to make the extreme point narrower, or even the same width, thus—



FIG. 6.

If necessary to swage the bits, take them out and swage them in the vise, then replace them, side file and round up the saw and sharpen the bits. Keep the pitch the same as when new. In side-filing, the file should be set in at an angle to form the point on a bevel as when new, leaving the extreme point full width. If the pitch is filed out, the strain is too great on the holder.

If the holders, having a stop at "E," Fig. 8, become loose, hammer along the inner circle of the mouth-piece at "C C C." The holder should never have a bearing at "E D," Fig. 7, so as to prevent a solid bearing of the bit against the plate at "A B." If the holder is too long, file off the end at "D" until the bit bears firmly against the plate at "A B." Better to shorten the holder at "D" until the light passes through when the bit bears firmly at "A B."

Those holders having no stop, as in Fig. 9, if they become loose require hammering at "A A A," if the holder is too small to fit the circle of the socket at "B B B." If, however, they fit this circle, the hammering should be done at "C C C." A few light blows on each side of the holder with the holder resting on an anvil is quite sufficient.

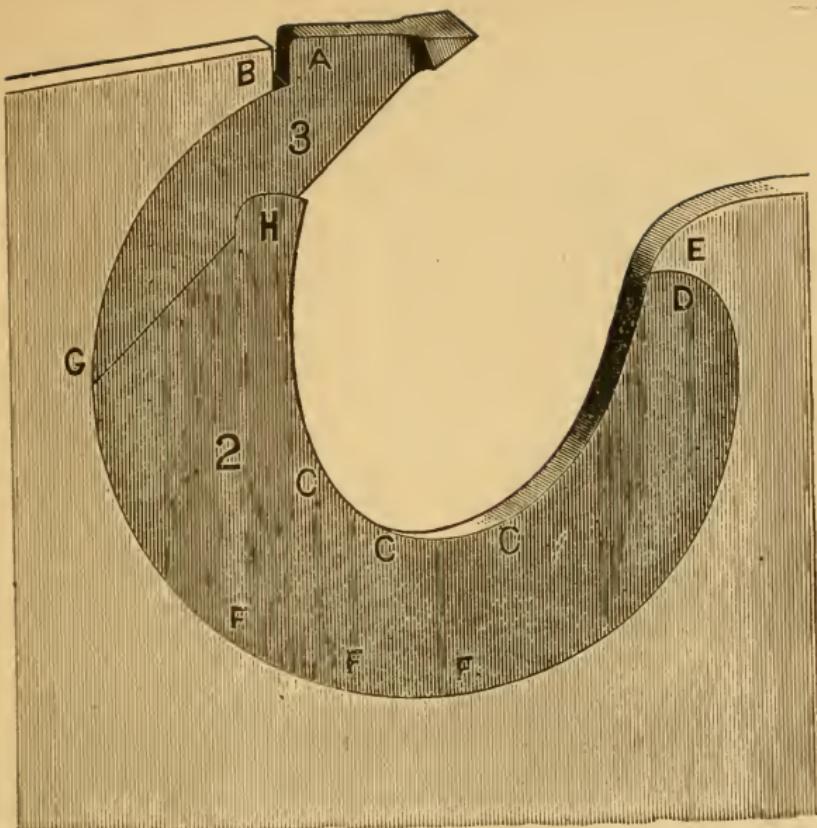


Fig. 7.

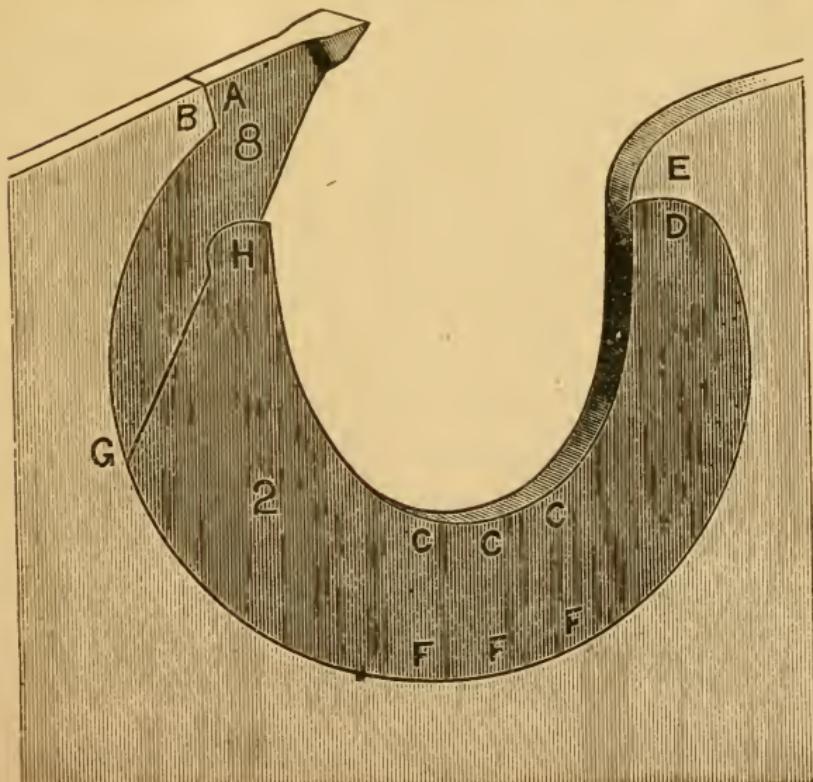


Fig. 8.

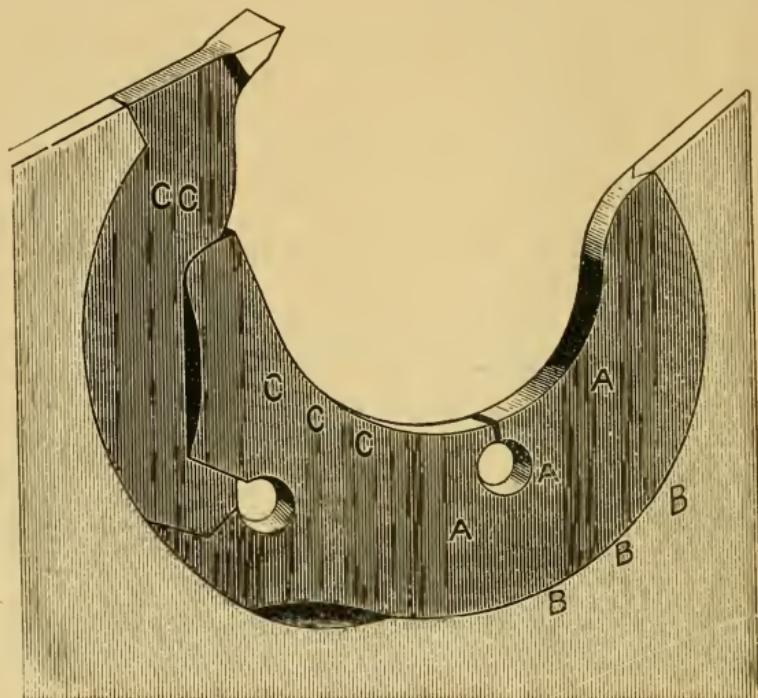


Fig. 9.

## TO LUMBER MANUFACTURERS AND SAW OPERATORS.

### • CAUSES OF COMPLAINT.

Good saws are frequently ruined by crowding them beyond their limit of endurance and by unskillful use. There are other causes which tend to produce dissatisfaction with good saws, among which may be mentioned: Saw too thin; teeth too coarse; saw not properly hung; saw not properly fitted or dressed; saw not properly balanced on mandrel; a badly running carriage; collars not true, etc.

### PROCURE GOOD SAWS.

In justice to saw-mill men, we have to say that they sometimes have good reasons for complaint on account of bad saws, which leads us to remark that it is the duty of every saw-mill man to procure a good and reliable saw. Too many are governed by prejudice in the selection of a saw, while others allow themselves to be influenced in the purchase by the matter of a few dollars in price. Purchasers should consider only the character of the saws offered them, based on the reputation of the manufacturer.

### ATKINS' SAWS RELIABLE.

We are ready to admit that we are not infallible in our work, but we claim most emphatically that we have come as near to perfection in saw making as is possible, as we use only the finest grades of selected steel and have in our employ the most skillful mechanics, assisted by the most modern machinery and appliances.

Our methods of tempering and adjusting circular saws produce uniform results, unexcelled by any methods known to the trade.

These facts, together with our invariable disposition to comply with the terms of our warranty, assure the buyer of the reliable character of the Atkins Saws.

## POINTS TO BE OBSERVED IN ORDERING SAWS.

---

In ordering a circular saw, the kind of work to be done and the power at hand to drive it, should always be taken into account.

### GAUGE OF SAW.

For mills of ordinary capacity, doing general work, we recommend saws seven gauge at the center, and eight on the rim. If the timber is valuable and the sawyer skillful, an eight by nine gauge may be used, and in special cases an eight by ten gauge. Any lighter gauge than eight at the center and ten at the rim we consider impracticable for use in ordinary mills. A trial of very thin saws as an economical means will, in most cases, be followed by disappointment, for greater than ordinary skill is necessary to successfully manage thin saws, and the lumber saved by the reduced thickness of the saw is more than offset by the waste by bad cuts, where the sawyer is not an expert.

The greater the speed and feed used, the heavier the saw should be to stand up to the work, hence it is that for the large mills, where the saving of time more than lumber is desired, saws of six and seven gauge are mostly in demand.

### NUMBER OF TEETH.

With a high motion more teeth are required, for high feed follows great speed, and the saw having more work to do should have more teeth with which to do it, in order that the strain may be evenly distributed.

The number of teeth, therefore, should depend not alone on the thickness of the saw, but on the kind of timber to be sawed, and the speed and feed of the mill.

Having considered these matters, orders for circular saws should be accompanied by the following:

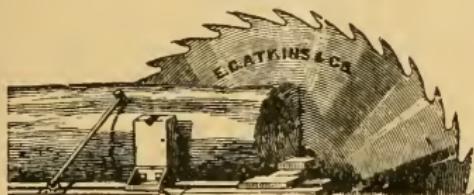
## INSTRUCTIONS FOR ORDERING CIRCULAR SAWS.

When ordering circular saws, the following directions should be explicitly given :

Diameter of saw in inches: right or left-hand (see engravings below); thickness or gauge of saw at rim; thickness or gauge of saw at center; number of teeth in saw; kind and No. of tooth, as shown on engraving (see following page); size of mandrel hole; size of pin holes; distance between pin holes from center to center; number of revolutions per minute; greatest feed at each revolution of saw, in inches; kind of lumber to be sawed; spring set or swage; whether for ripping or cross-cutting. When ordering bolting saws, state whether rip or cross-cut.

N. B.—All our stock saws forty inches and larger in diameter have 2-inch mandrel holes and  $\frac{5}{8}$  lug pin holes, three inches from center to center. If wanted different, please send full pattern of holes.

### RIGHT-HAND.



### LEFT-HAND.

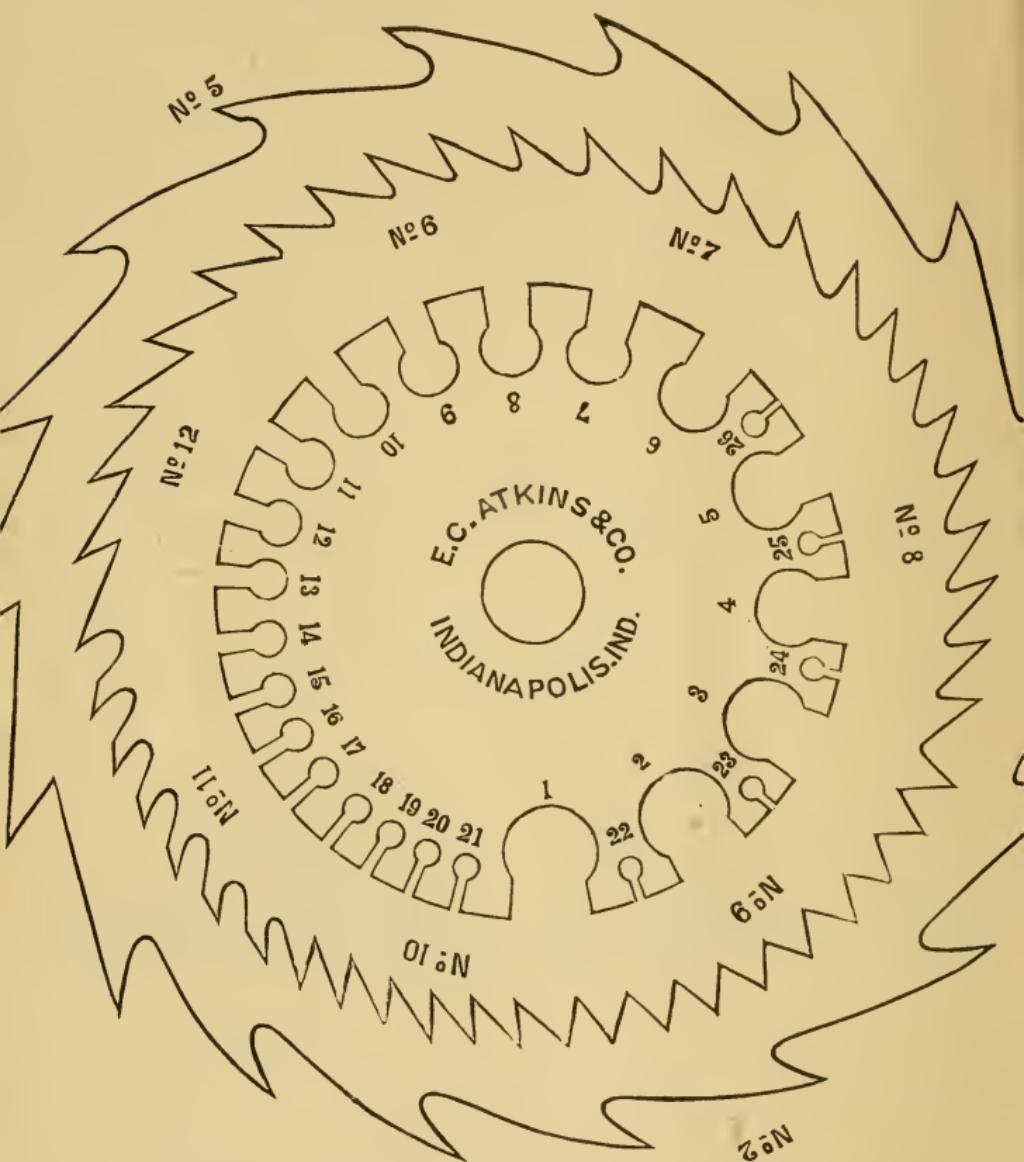


Standing in front of a circular saw, with the saw revolving toward you, if the log passes to the right of the saw it is a right-hand saw; if to the left, it is a left-hand saw.

## OUR STANDARD GAUGE

**EXACTLY CORRESPONDS WITH THE STUBBS ENGLISH GAUGE.**

Gauge No. 4.....	$\frac{1}{4}$ inch scant.	Gauge No. 11.....	$\frac{1}{8}$ inch scant.
" " 5.....	$\frac{3}{16}$ inch.	" " 12.....	$\frac{7}{32}$ inch.
" " 6.....	$\frac{5}{16}$ inch.	" " 13.....	$\frac{3}{16}$ inch.
" " 7.....	$\frac{13}{32}$ inch scant.	" " 14.....	$\frac{5}{32}$ inch full.
" " 8.....	$\frac{3}{8}$ inch full.	" " 15.....	$\frac{6}{32}$ inch scant.
" " 9.....	$\frac{5}{16}$ inch scant.	" " 16.....	$\frac{7}{32}$ inch full.
" " 10.....	$\frac{1}{2}$ inch full.	" " 22.....	$\frac{3}{8}$ inch full.



The above illustration represents our various styles and sizes of Saw Teeth; also our Standard Gauge. By consulting it, a person will be enabled to inform us the size and style of tooth, and also the gauge of any saw he may desire.

## THE MOTION OF CIRCULAR SAWS.

This is one of the most essential things to be observed, and no one can give this too much attention. If the speed of the saw is too high, it can not do good work, besides rendering it liable to many accidents. It generates heat in the saw, makes it touchy and limber, and it will only run and do good work on light feed, and while the teeth are in the best of order, and have a keen, sharp, cutting corner; as soon as this is gone, the saw will run or dodge whenever it comes in contact with the least obstacle. And again: Too low has its objections, but it is not attended with such ruinous effects upon the saw. These difficulties can be remedied to a limited extent by the hammering of the saw, but can not be entirely overcome.

**TABLE OF SPEED OF CIRCULAR SAWS.**

SIZE OF SAW.	REV. PER MIN.	SIZE OF SAW.	REV. PER MIN.
8 inches.	4,500	42 inches.	870
10 inches.	3,600	44 inches.	840
12 inches.	3,000	46 inches.	800
14 inches.	2,585	48 inches.	750
16 inches	2,222	50 inches.	725
18 inches.	2,000	52 inches.	700
20 inches.	1,800	54 inches.	675
22 inches.	1,636	56 inches.	650
24 inches	1,500	58 inches.	625
26 inches.	1,384	60 inches.	600
28 inches.	1,285	62 inches.	575
30 inches.	1,200	64 inches.	550
32 inches.	1,120	66 inches.	545
34 inches.	1,050	68 inches.	529
36 inches.	1,000	70 inches.	514
38 inches.	950	72 inches.	500
40 inches.	900	.....	.....

The above table is figured on a periphery speed of 9000 ft. per minute, but saws for portable mills are usually run at a speed of about 450 revolutions per minute, and saws for steam feed mills, from 600 to 900 revolutions per minute.

## RULES FOR CALCULATING THE SPEED OF SAWS, PULLEYS OR DRUMS.

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**PROBLEM 1.** The diameter of the driven being given, to find its number of revolutions.

**RULE.**—Multiply the diameter of the driver by its number of revolutions, and divide the product by the diameter of the driven; the quotient will be the number of revolutions of the driven.

**PROBLEM 2.** The diameter and revolutions of the driver being given, to find the diameter of the driven, that shall make any given number of revolutions in the same time.

**RULE.**—Multiply the diameter of the driver by its number of revolutions, and divide the product by the number of revolutions of the driven; the quotient will be its diameter.

**PROBLEM 3.** To ascertain the size of the driver.

**RULE.**—Multiply the diameter of the driven by the number of revolutions you wish it to make, and divide the product by the revolutions of the driver; the quotient will be the size of the driver.

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## GENERAL HINTS RESPECTING THE MANNER OF FITTING OR DRESSING SAWS.

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A saw tooth should have the proper spread and pitch for the wood which it is to cut. Soft wood requires more spread or "set," and less pitch; hard wood the reverse. A saw swaged full on both corners with square dress will do the fastest cutting, but requires the most power. In swaging use oil on point of tooth.

By careless dressing we have seen saw teeth higher back of the cutting point than at the point itself, thereby causing the saw to bind and heat on the rim.

The greater the feed the lower the back of the tooth should be, giving easier clearance and greater dust room.

In spreading the points of teeth it is almost impossible to make them all of equal width, but they may be reduced to a uniform width by the use of our patent Side File, which is illustrated herein.

By this treatment the corners are stronger and less liable to break off in hard cuts.

## THE EMERY WHEEL.

---

Emery wheels, as employed in gumming and sharpening saws, accomplish a great saving of time and labor, but when improperly used, as they often are, cause irreparable injury to saws. When the points of teeth become heated or "blued" by the use of an emery wheel, the steel loses its toughness and tenacity in some degree, and is liable to split and crumble off in the process of spreading the points afterward.

We have had saws returned to the factory in this condition, said to be defective, which we were unable ourselves to spread on the points without checking and breaking them off, but which, after cutting off the points and starting new teeth, stood every test perfectly, thus proving that the trouble was caused by the improper use of the emery wheel.

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## BAD FILING.

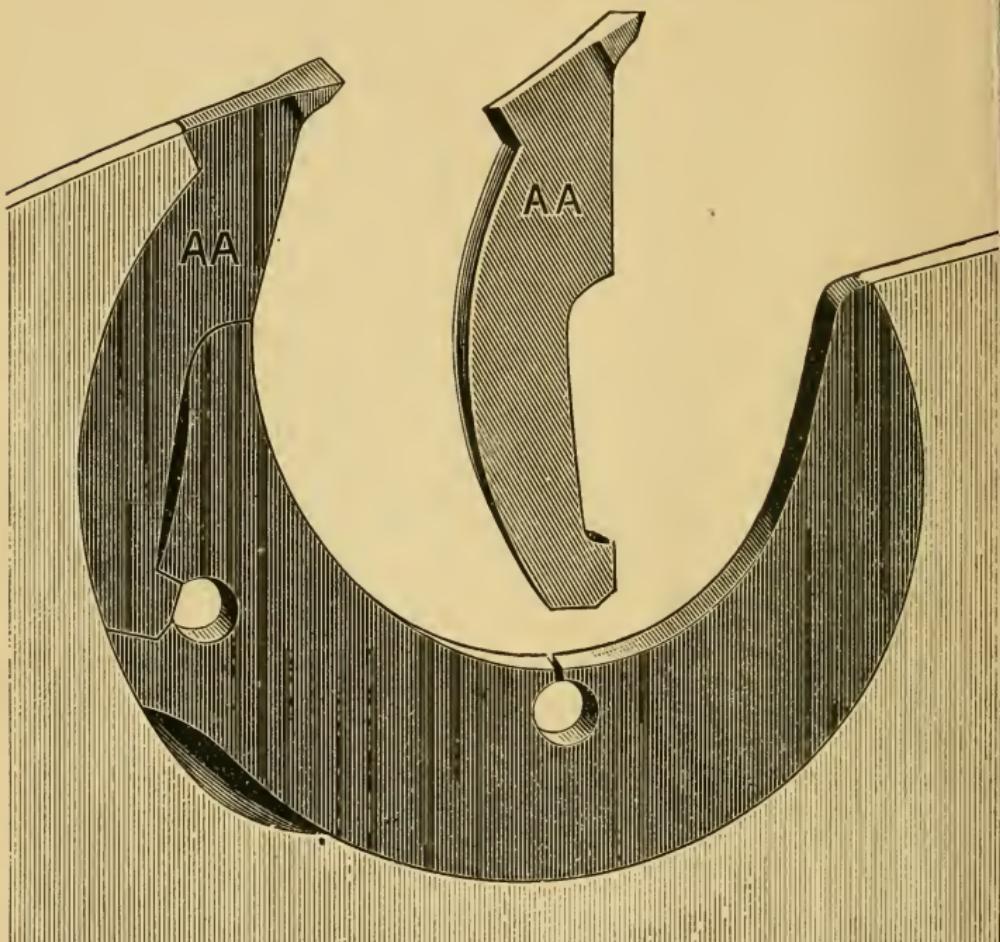
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No saws are so liable to crack in using as circular cut-off saws, for the reason that they are generally filed so as to leave a square corner at the base of the teeth, and the bevel of the face being carried down into this corner, still further weakens it. Saws broken in this condition can not be considered subject to our warranty.

It is surprising that so many still persist in this manner of filing, when a few strokes with a round file at the base of the tooth after beveling the front, will keep it in good shape by preventing the formation of the square corners from which the crack starts. The saw will clear better if the bevel is carried down only half the depth of the teeth.

## INSERTED TOOTH SAWS.

CHISEL TOOTH "AA." PATENTED MARCH 28, 1893.



The above cut shows full size of "AA" tooth.

Especially adapted for use on the Pacific Coast.

The following list gives the number of teeth allowed in Chisel Point Saw "AA":

Size .....	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50
No. Teeth .....	10	10	12	12	14	14	16	18	20	20	22	24	24	26	28	30
Size.....						52	54	56	58	60	62	64	66	68	70	72
No. Teeth.....						30	32	32	34	34	36	36	40	40	44	44

For prices, see page 32.

For each additional tooth inserted, add \$1.75.

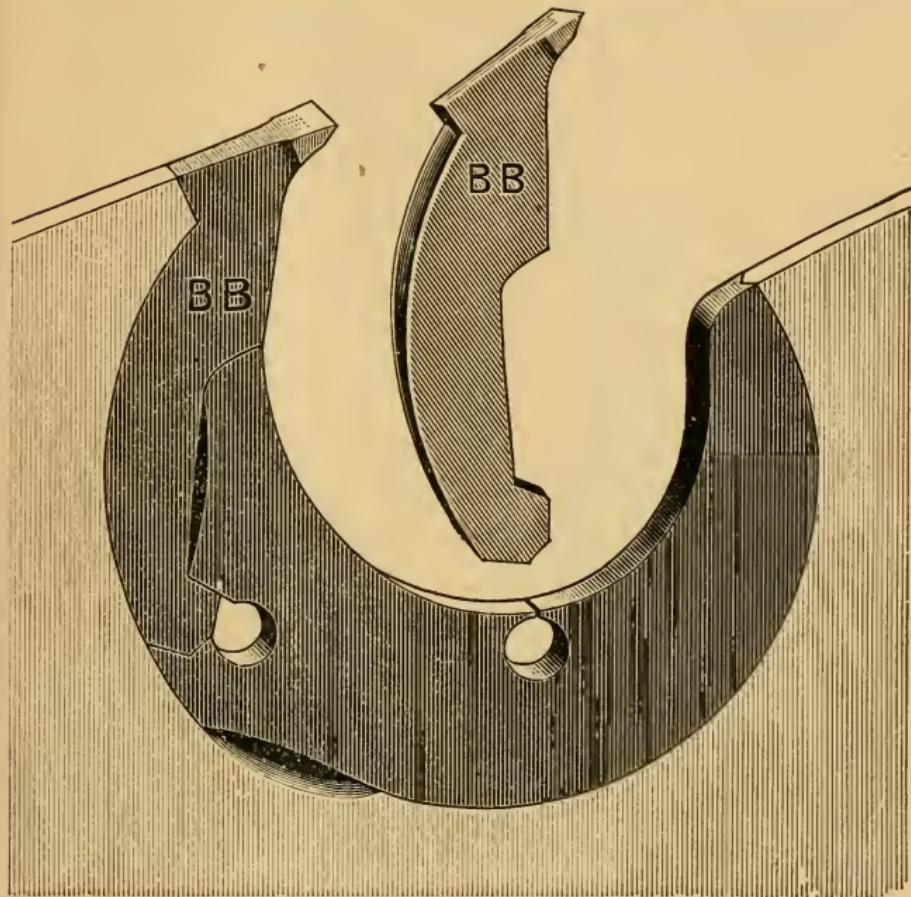
Duplicate "AA" Points, \$6.00 per hundred.

Duplicate "AA" Holders, 60 cents each.

Wrenches, \$1.00 each.

## INSERTED TOOTH SAWS.

CHISEL TOOTH "BB." PATENTED MARCH 28, 1893.



The above cut shows full size of "BB" tooth.

For general sawing. Best tooth in frozen timber.

The following list gives the number of teeth allowed in Chisel Point Saw "BB."

Size.....	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
No. Teeth.....	12	12	14	14	16	16	18	20	22	22	24	24	26	28	28
Size.....	50	52	54	56	58	60	62	64	66	68	70	72			
No. Teeth.....	30	30	32	34	34	36	36	38	40	40	42	42			

For prices, see page 32.

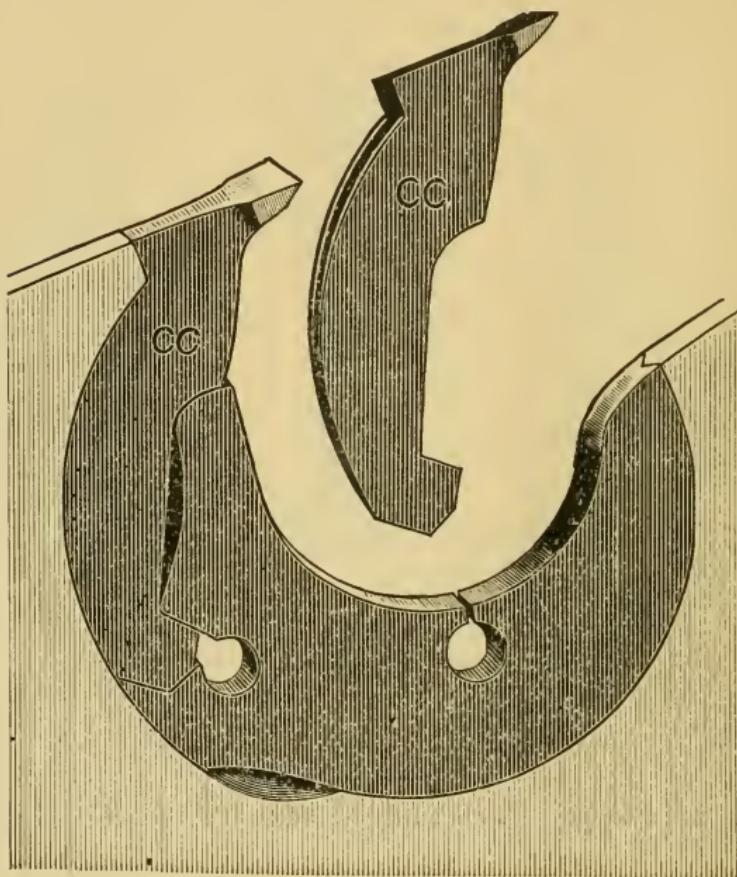
For each additional tooth inserted, add \$1.75.

Duplicate "BB" Points, \$6.00 per hundred.

Duplicate "BB" Holders, 55 cents each.

Wrenches, \$1.00 each.

• INSERTED TOOTH SAWS  
CHISEL TOOTH "CC" PATENTED MARCH 28, 1893.



The above cut shows full size of "CC" tooth.

The best tooth for hard wood.

The following list gives the number of teeth allowed in Chisel Point Saw "CC:"

Size .....	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
No. Teeth .....	10	10	12	14	14	16	18	18	20	20	22	22	24	24	26

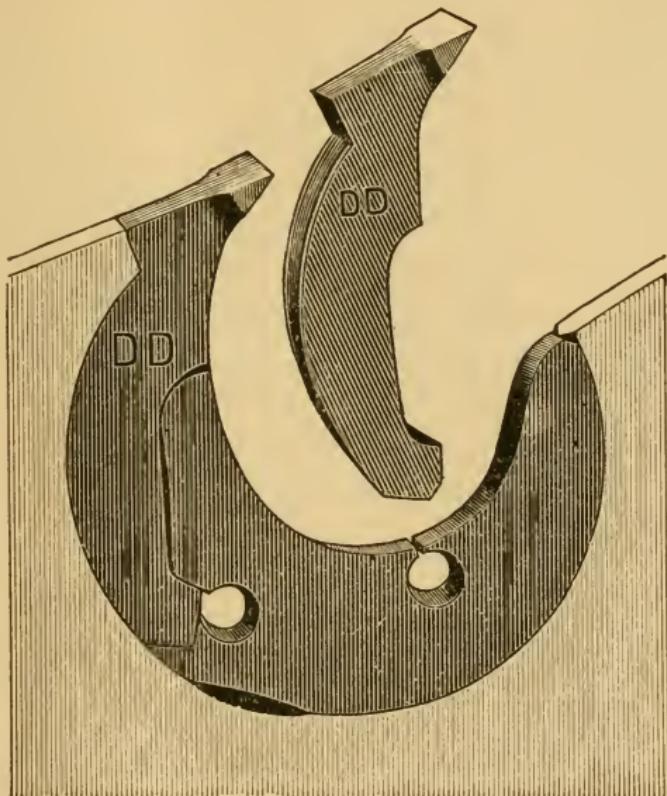
Size .....	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70	72
No. Teeth .....	28	30	30	32	34	36	38	40	42	42	44	44	48	48	52	52

For prices, see page 32.

For each additional tooth inserted, add \$1.75.  
 Duplicate "CC" Points, \$5.00 per hundred.  
 Duplicate "CC" Holders, 50 cents each.  
 Wrenches, \$1.00 each.

## INSERTED TOOTH SAWS.

CHISEL TOOTH "DD." PATENTED MARCH 28, 1893.



The above cut shows full size of "DD" tooth.

Used principally for Edger and Bolter Saws.

The following list gives the number of teeth allowed in Chisel Point Saw "DD":

Size, inches.....	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
No. Teeth.....	10	10	12	14	16	18	20	22	22	24	24	26	26	28	28	30	32

For prices, see page 32.

The "D D" inserted tooth Saw can be furnished any size, one tooth to the inch.

For each additional tooth inserted, add \$1.50.

Duplicate "D D" Points, \$5.00 per hundred.

Duplicate "D D" Holders, 45 cents each.

Wrenches, \$1.00 each.

**INSERTED TOOTH SAWS.****CHISEL TOOTH.—PRICE-LIST.**

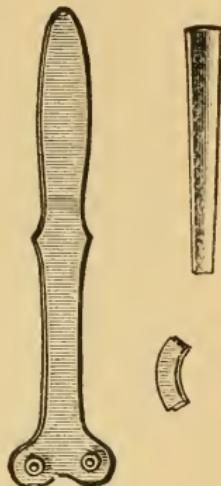
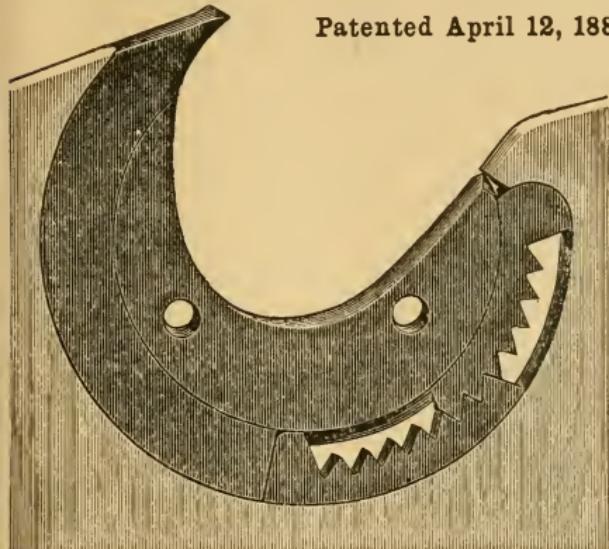
Diameter. Inches.	Thickness Gauge.	No. of Teeth.	Size Hole, Inches.	Price. Each.	Extra for each ad- ditional gauge. (Heavier).	Price for bevel- ing new saws. (Grinding or beveling old saws extra).
12	11	10	. .	\$17 00	\$0 17	\$0 35
14	11	10	. .	19 00	21	40
16	11	12	. .	22 00	25	50
18	11	14	1 $\frac{1}{4}$	25 00	30	60
20	11	14	1 $\frac{5}{6}$	30 00	35	70
22	11	16	1 $\frac{5}{6}$	35 00	45	80
24	11	18	1 $\frac{3}{8}$	40 00	55	90
26	10	18	1 $\frac{3}{8}$	45 00	65	1 05
28	10	20	1 $\frac{1}{2}$	50 00	80	1 20
30	10	20	1 $\frac{1}{2}$	55 00	90	1 30
32	9	22	1 $\frac{1}{2}$	60 00	1 00	1 40
34	9	22	1 $\frac{1}{2}$	66 00	1 20	1 55
36	8	24	1 $\frac{1}{2}$	72 00	1 40	1 70
38	8	24	1 $\frac{1}{8}$	78 00	1 75	1 85
40	8	26	2	84 00	2 00	2 00
42	8	28	2	90 00	2 50	2 20
44	7	30	2	97 00	3 00	2 40
46	7	30	2	105 00	3 50	2 60
48	7	32	2	115 00	4 00	2 80
50	7	34	2	130 00	4 50	3 00
52	6	36	2	150 00	5 00	3 25
54	6	38	2	175 00	6 00	3 50
56	6	40	2	200 00	7 00	3 75
58	6	42	2	225 00	8 00	4 05
60	5	42	2	255 00	9 00	4 35
62	5	44	2	290 00	10 00	4 65
64	5	44	2	325 00	12 00	5 00
66	5	48	2	360 00	15 00	5 35
68	5	48	2	400 00	18 00	5 75
70	4	52	2	450 00	21 00	6 15
72	4	52	2	500 00	24 00	6 55

Ten extra sets of Points given with each saw, whether new or altered from a solid tooth. For each additional tooth inserted, add \$1.75; for each tooth less than the number indicated on the list or regular, deduct \$1.75 list.

Above list gives number of teeth allowed in "CC" tooth saw, which is especially adapted for hard woods.

## ADJUSTABLE TOOTH CIRCULAR SAWS.

Patented April 12, 1887.



## TOOLS FURNISHED WITH EACH SAW.

## 1. Wrench.

## 1. Taper Swaging Key.

## 1. Set Followers.

Diameter Inches.	Thick- ness. Gauge.	No. of Teeth.	Size of Hole. Inches.	Price. Each.	Extra for each addi- tional Gauge. (Heavier.)	Price for bevel- ing new saws. (Grinding or beveling old saws extra )
20	11	12	1 $\frac{5}{8}$	\$30 00	\$0 35	\$0 70
22	11	12	1 $\frac{5}{8}$	35 00	45	80
24	11	14	1 $\frac{3}{8}$	40 00	55	90
26	10	14	1 $\frac{3}{8}$	45 00	65	1 05
28	10	16	1 $\frac{1}{2}$	50 00	80	1 20
30	10	16	1 $\frac{1}{2}$	55 00	90	1 30
32	9	18	1 $\frac{5}{8}$	60 00	1 00	1 40
34	9	18	1 $\frac{5}{8}$	66 00	1 20	1 55
36	8	20	1 $\frac{5}{8}$	72 00	1 40	1 70
38	8	22	1 $\frac{5}{8}$	78 00	1 75	1 85
40	8	24	2	84 00	2 00	2 00
42	8	24	2	90 00	2 50	2 20
44	7	26	2	97 00	3 00	2 40
46	7	26	2	105 00	3 50	2 60
48	7	28	2	115 00	4 00	2 80
50	7	28	2	130 00	4 50	3 00
52	6	30	2	150 00	5 00	3 25
54	6	32	2	175 00	6 00	3 50
56	6	34	2	200 00	7 00	3 75
58	6	34	2	225 00	8 00	4 05
60	5	36	2	255 00	9 00	4 35
62	5	38	2	290 00	10 00	4 65
64	5	40	2	325 00	12 00	5 00
66	5	42	2	360 00	15 00	5 35
68	5	42	2	400 00	18 00	5 75
70	4	44	2	450 00	21 00	6 15
72	4	44	2	500 00	24 00	6 55

Prices for Teeth and Tools: Wrench, \$1.00. Adjustable Tooth, 50 cents. Eccentric Fastener, \$1.00. Followers, 20 cents each, list.

## KERF KING SAWS.

Twelve-Gauge Circular Saws for Log Mills.

ADVANTAGES TO BE GAINED IN USING THE KERF KING SAWS.



### PRICE-LIST.

Diameter. Inches.	Thickness. Gauge.	Hub Diam. Inches.	Number of Teeth.	Size of Hole. Inches.	Price. Each.
30	8x12x14	6	40	2	\$25 00
32	8x12x14	6	42	2	28 00
34	8x12x14	6	44	2	32 00
36	8x12x14	6	46	2	36 00
38	8x12x14	6	48	2	42 00
40	7x11x13	6½	50	2	50 00
42	7x11x13	6½	52	2	60 00
44	7x11x13	6½	54	2	73 00
46	7x11x13	6½	56	2	85 00
48	7x11x13	6½	58	2	100 00
50	6x10x12	7	60	2	112 00
52	6x10x12	7	62	2	125 00
54	6x10x12	7	66	2	140 00
56	6x10x12	7	66	2	160 00
58	6x10x12	7	70	2	180 00
60	6x10x12	7	70	2	200 00
62	6x10x12	7	72	2	240 00
64	6x10x12	7	76	2	265 00
66	6x10x12	7	76	2	300 00
66	5x 8x10	7	72	2	300 00
68	6x10x12	7	80	2	350 00
68	5x 8x10	7	80	2	350 00
70	6x10x12	7	80	2	400 00
70	5x 8x10	7	80	2	400 00
72	6x10x12	7	80	2	450 00
72	5x 8x10	7	80	2	450 00

The number of teeth is given for a speed of 400 to 500 revolutions per minute for 48-in. diameter and over. For each hundred increase in speed add ten to the number of teeth. The flat hub at center of saw should be one inch larger in diameter than collar on saw mandrel.

Saws constructed by this method will run with much narrower swage or set, and do their work with less binding and friction, thus avoiding the expenditure of a great portion of the motive power usually employed in driving such saws. A large saving is made in the Kerf, which is an important item, of loss in lumber manufactured by the old method with heavy saws, a large amount of lumber being wasted in sawdust.

The Kerf King Saws are made at center from 4 to 6 gauge thick, according to size of saw, and are left even thickness at center for a space of about 7 inches diameter. They are shouldered on one or both sides and ground abruptly to ten-gauge. From the shoulder they are evenly ground to the rim twelve-gauge.

**SOLID TOOTH CIRCULAR SAWS.****Patent Ground and Tempered.**

Made of best selected Cast Steel—extra quality. Workmanship unequaled.

Diameter Inches.	Thickness Gauge.	Size of Hole Inches.	Price Each.	Extra for each addi- tional Gauge, (Heavier.)	Price for Beveling New Saws Per Gauge.	Setting and Sharpening Cross-Cut Saws, each.
4	19	5/4	\$1 00	\$0 03	\$0 14	\$0 35
5	19	3/4	1 20	.04	16	40
6	18	3/4	1 40	.05	18	45
7	18	3/4	1 70	.06	20	50
8	18	7/8	2 00	.08	22	55
9	17	7/8	2 50	.10	25	60
10	16	1	3 00	.12	28	65
11	16	1	3 50	.14	30	70
12	15	1	3 75	.17	35	75
14	15	1 1/8	4 50	.21	40	85
16	14	1 1/8	5 50	.25	50	95
18	13	1 1/8	7 00	.30	60	1 05
20	13	1 1/4	8 50	.35	70	1 15
22	12	1 1/4	10 00	.45	80	1 30
24	11	1 1/4	12 00	.55	90	1 45
26	11	1 1/4	14 00	.65	1 05	1 60
28	10	1 3/8	16 00	.80	1 20	1 75
30	10	1 3/8	18 00	.90	1 30	1 95
32	10	1 1/2	20 00	1 00	1 40	2 05
34	9	1 1/2	22 50	1 20	1 55	2 35
36	9	1 5/8	25 50	1 40	1 70	2 55
38	9	1 5/8	30 00	1 75	1 85	2 75
40	9	2	35 00	2 00	2 00	2 95
42	8	2	42 00	2 50	2 20	3 15
44	8	2	50 00	3 00	2 40	3 35
46	8	2	60 00	3 50	2 60	3 60
48	8	2	70 00	4 00	2 80	3 80
50	7	2	80 00	4 50	3 00	4 10
52	7	2	90 00	5 00	3 25	4 40
54	7	2	100 00	6 00	3 50	4 70
56	7	2	115 00	7 00	3 75	5 00
58	7	2	130 00	8 00	4 05	5 30
60	6	2	145 00	9 00	4 35	5 60
62	6	2	160 00	10 00	4 65	6 00
64	6	2	180 00	12 00	5 00	6 30
66	6	2	200 00	15 00	5 35	6 60
68	5	2	225 00	18 00	5 75	6 90
70	5	2	255 00	21 00	6 15	7 20
72	5	2	290 00	24 00	6 55	7 50
74	5	2	330 00	27 00	7 00	7 80
76	5	2	375 00	30 00	7 50	8 10

Setting and sharpening Rip Saws  $\frac{2}{3}$  price Cross-Cut.Filing and setting rip saws, 40 in. and under,  $\frac{2}{3}$  price for setting and sharpening Cross-Cut Saws.

No extra charge for saws one gauge thicker than list.

Saws 38 inches and under beveled one gauge without extra charge.

Saws 40 inches and over beveled two gauges without extra charge.

We furnish Lathe Saws for handle turning machines and similar work at special prices.

Saws 48 inches in diameter, and larger, thinner than ten gauge, add ten per cent. for each gauge thinner, and no warrant.

## TOP SAWS FOR DOUBLE MILLS.

GAUGE.	DIAMETER IN INCHES.						
	24	26	28	30	32	34	36
10 .....each	\$12 00	\$14 50	\$16 00	\$18 00	\$20 00	\$22 50	\$25 50

## RE-SAWING OR SIDING SAWS.

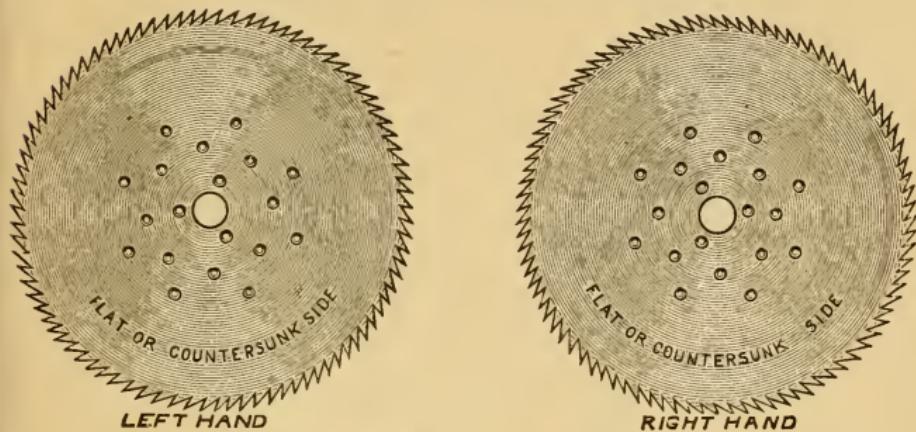
### GROUND TAPERING.

Diameter. Inches.	Gauge.	Price, Each.	Diameter. Inches.	Gauge.	Price, Each.
16	13 x 17	\$7 00	23	9 x 13	\$19 60
16	12 x 16	7 25	28	9 x 14	20 80
16	11 x 15	7 50	28	8 x 13	20 40
18	12 x 16	8 80	30	9 x 13	21 90
18	11 x 15	9 10	30	9 x 14	23 20
18	12 x 17	9 40	30	8 x 13	24 10
20	12 x 16	10 60	32	9 x 13	24 20
20	11 x 15	10 95	32	9 x 14	25 60
20	12 x 17	11 30	32	8 x 13	26 60
22	11 x 15	12 40	34	9 x 13	27 15
22	10 x 14	12 85	34	8 x 13	28 70
22	11 x 16	13 20	34	8 x 14	30 25
24	10 x 14	14 70	36	8 x 13	32 30
24	9 x 13	15 25	36	8 x 14	34 00
24	10 x 15	15 60	33	7 x 14	37 10
26	10 x 14	17 15	33	8 x 12	35 55
26	9 x 13	17 80	38	8 x 13	37 40
26	10 x 15	18 20	38	7 x 13	41 00

## EDGER SAWS.

GAUGE.	DIAMETER IN INCHES.						
	12	14	16	18	20	22	24
12 .....each	\$4 10	\$4 95	\$5 75	\$7 00	\$8 50	\$10 00	\$12 00
11 ..... "	4 25	5 15	6 00	7 30	8 85	10 00	12 00
10 ..... "	4 45	5 35	6 25	7 60	9 20	10 45	12 00
9 ..... "	4 60	5 55	6 50	7 90	9 55	10 90	12 55
8 ..... "	4 75	5 75	6 75	8 20	9 90	11 35	13 10

## SHINGLE AND HEADING SAWS, OF THE BEST SELECTED CAST STEEL.



### TAPERED AND PATENT GROUND.

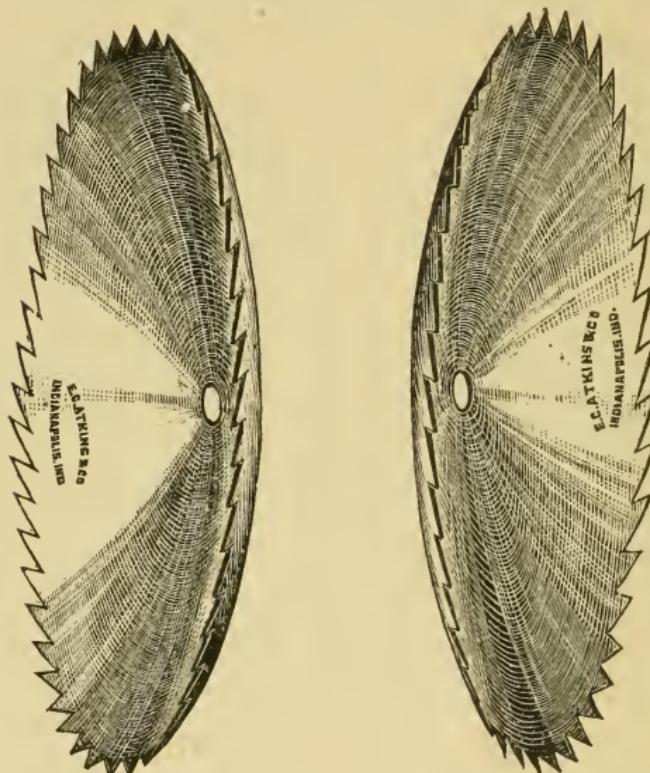
Inches	30	32	34	36	38	40	42	44	46	48
Each ..	\$29 00	32 00	35 00	38 50	44 00	50 00	60 00	72 00	85 00	100 00
Inches.....										
	50				52			54		56
Each .....										
	\$115 00				\$135 00			\$155 00		\$175 00

When ordering Shingle Saws give following specifications: Diameter of saw in inches, thickness or gauge of saw at center and at rim, full sketch of pattern of holes and sample of screw by which to drill and countersink saw. If you have a flange, send it, to have holes drilled in saw to fit flange. If you wish us to furnish the flange, send full and correct sketch, diameter, thickness, holes, etc. Give maker's name of machine upon which saw is to be used, number of teeth you desire to have in saw, and be sure to give flat or countersunk side, and the direction in which the teeth run. (See engraving above.)

### SHINGLE AND HEADING SAW FLANGES.

Inches, diameter.....	18	20	21½	24
For Saws, diameter.....	30 to 34	36 to 38	40 to 46	48 to 50
Each.....	\$18 00	\$20 00	\$21 50	\$24 00

## CONCAVE SAWS.



LEFT HAND.

RIGHT HAND.

Inches.	Gauge.	Price, each.	Extra for each additional Gauge. Cents.
4	16	\$2 20	5
6	16	2 20	5
7	15	2 60	6
8	15	3 10	8
9	15	3 60	10
10	14	4 50	13
12	14	5 90	17
14	13	7 20	21
16	13	9 00	25
18	12	10 75	30
20	12	13 50	35
22	12	16 50	40

All Saws concaved to a smaller circle than 16 inches, extra price.

Extra sizes made to order. When ordering Concave Saws, give circle to be cut; also, which side is to be dished or concaved, right or left-hand, Saw running toward you. (See cut.)

**CIRCULAR MITER SAWS.****HOLLOW GROUND.**

These saws are ground to run without set, especially adapted for smooth cutting, such as Cabinet and Cigar-box work. When ordering, give size of center hole, also diameter of collar on mandrel.

Size.	Gauge at Hole.	Gauge at Teeth	Price Each.
6 in.	19	16	\$3 50
7 in.	19	16	3 75
8 in.	19	16	4 00
9 in.	18	15	4 75
10 in.	17	14	5 00
11 in.	17	14	5 25
12 in.	17	14	5 75
14 in.	17	14	6 75
16 in.	16	13	7 50
18 in.	16	13	8 25
20 in.	16	13	10 00
22 in.	15	12	12 00
24 in.	15	12	14 00

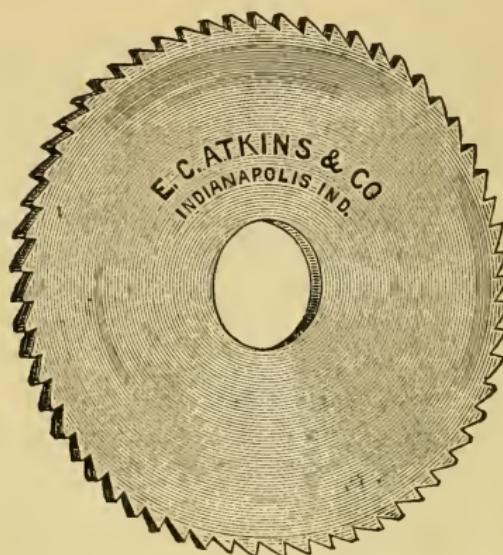
Extra gauges heavy, and beveling will be charged for same as our regular circular saw list.

**GROOVING SAWs.**

Diam. Inches.	THICKNESS.						
	1/8 Inch.	3/16 Inch.	1/4 Inch.	5/16 Inch.	3/8 Inch.	7/16 Inch.	1/2 Inch.
4	\$1 20	\$1 40	\$1 60	\$2 50	\$3 50	\$4 50	\$5 50
5	1 55	1 75	2 10	3 00	4 00	5 00	6 00
6	1 90	2 20	2 70	3 50	4 50	5 50	6 50
7	2 30	2 70	3 30	4 00	5 00	6 00	7 00
8	2 70	3 20	3 90	4 75	5 75	6 75	7 75
9	3 30	3 75	4 50	5 25	6 25	7 25	8 25
10	3 90	4 50	5 10	6 00	7 00	8 00	9 00
11	4 50	5 10	5 70	6 50	7 50	8 50	9 50
12	5 10	5 70	6 25	7 50	8 50	9 50	10 50
Space Teeth 1/2 in.	1 inch.	1 inch.	1 1/4 inch.	1 1/2 inch.	1 3/4 inch.	2 inch.	

Saws with less space or special teeth extra price.

## MILLING SAWS FOR METAL.



Diameter.	Gauge.	Size of Hole.	No. of Teeth.	Price, Each.	Extra for Each Additional Gauge Heavier.
2	22 x 20	$\frac{1}{2}$	48	\$1 40	\$0 02
3	22 x 20	$\frac{1}{2}$	64	1 70	03
4	21 x 19	$\frac{3}{4}$	76	1 90	04
5	20 x 18	$\frac{5}{4}$	88	2 30	05
6	19 x 17	1	96	2 90	06
7	18 x 16	1	104	3 35	08
8	18 x 16	1	110	4 00	10
9	17 x 15	1	116	5 00	12
10	16 x 14	$1\frac{1}{4}$	120	6 25	15
12	16 x 13	$1\frac{1}{4}$	134	7 75	21
14	14 x 11	$1\frac{1}{2}$	148	10 00	26
16	13 x 10	$1\frac{1}{2}$	160	12 00	31
18	12 x 9	$1\frac{3}{4}$	172	15 00	38
20	11 x 8	$1\frac{3}{4}$	184	18 50	45
22	10 x 7	2	192	21 75	55
24	9 x 6	2	200	25 75	70
26	9 x 6	$2\frac{1}{2}$	208	31 00	80
28	8 x 5	$2\frac{1}{2}$	214	34 50	1 00
30	8 x 5	$2\frac{1}{2}$	222	38 50	1 12
32	7 x 4	$2\frac{1}{2}$	228	44 00	1 25
34	6 x 3	$2\frac{1}{2}$	232	48 50	1 50
36	6 x 3	$2\frac{1}{2}$	236	54 00	1 75
38	5 x 2	$2\frac{1}{2}$	240	61 00	2 00
40	5 x 2	$2\frac{1}{2}$	256	68 00	2 30
42	$\frac{1}{4}$ x $\frac{5}{4}$	3	260	76 00	2 60
44	$\frac{1}{4}$ x $\frac{5}{4}$	3	266	85 00	2 90
46	$\frac{1}{4}$ x $\frac{5}{4}$	3	272	95 00	3 25
48	$\frac{1}{4}$ x $\frac{5}{4}$	3	280	110 00	3 60

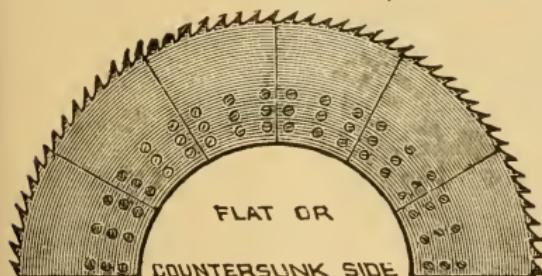
## VENEERING SAWS IN SEGMENTS.

When ordering segments, give gauge or thickness at butt, gauge or thickness at edge, depth of bevel, diameter of saw that segments are to form, number of segments in saw, depth of segments, number of teeth in each segment, sample of screw by which to drill and countersink flat or countersunk side, and direction in which teeth run. (See engraving).

FLAT OR  
COUNTERSUNK SIDE

Right Hand.

In ordering for a flange that has been drilled, send a sheet-iron or tin templet, or a correct tracing, showing holes and other particulars; or one of the old segments, giving the depth they originally were.



Left Hand.

### PRICE SEGMENT SAWS.

12 inches deep, No. 5 gauge, per foot in diameter of saw.....	\$17 05
12 inches deep, No. 6 gauge, per foot in diameter of saw.....	16 20
12 inches deep, No. 7 gauge, per foot in diameter of saw.....	15 50
12 inches deep, No. 8 gauge, per foot in diameter of saw.....	14 50
12 inches deep, No. 9 gauge, per foot in diameter of saw.....	14 00
12 inches deep, No. 10 gauge, per foot in diameter of saw.....	13 50

Add five per cent. for each additional inch in depth.

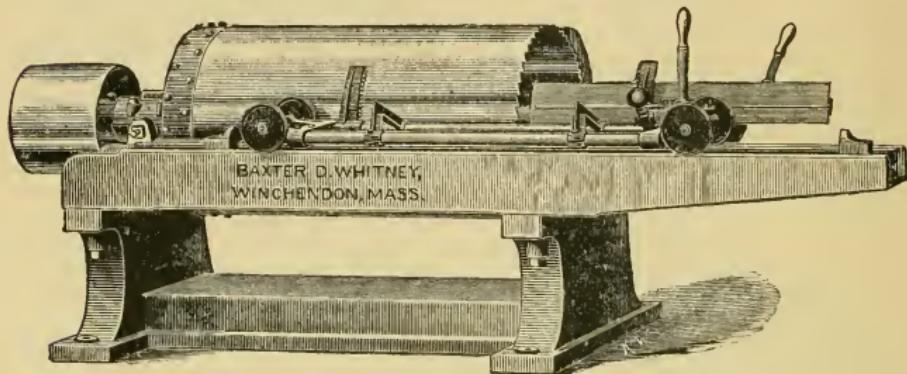
Deduct five per cent. for each inch under twelve inches in depth.

### CIRCULAR SAWS OR DISCS, FOR CUTTING HOT OR COLD IRON.

Diameter. Inches.	Thickness. Gauge.	Price. Each.	Diameter. Inches.	Thickness. Gauge.	Price. Each.
14	10	\$4 00	34	5	\$18 50
16	10	5 00	36	5	20 50
18	8	6 50	38	4	24 00
20	8	7 50	40	3	29 50
22	7	9 00	42	3	35 00
24	7	10 50	44	3	41 00
26	7	12 00	46	3	50 00
28	6	13 50	48	3	60 00
30	6	15 50	50	3	70 00
32	6	17 00			

**WESTERN AND SOUTHERN AGENTS FOR THE WHITNEY PATENT STAVE SAWING MACHINE.**

**THE MOST PRACTICAL MACHINE MADE.**



We make a specialty of re-steeling cylinder saws. Satisfaction guaranteed. Cylinder and Bilge Saws of all descriptions. All these saws are tempered and ground by patented processes, which add greatly to their durability and efficiency.

**PRICE-LIST OF SAWS FOR BUCKET, TUB, KEG AND BARREL STAVES.**

KIND OF STAVE.	Diameter of Saw.	Length of Saw Inside.	Price of Saw with Wood Frame and Iron Carriage Complete.	Price of Saw with Iron Frame and Iron Carriage Com- plete.
For buckets or pails .....	11 inch.	15 inch.	\$148 00	.....
For small tubs .....	15 " "	15 " "	188 40	.....
For wash tubs .....	20 " "	19 " "	291 60	.....
For large wash tubs .....	22 " "	22 " "	351 78	.....
For 5 gallon kegs .....	12 " "	20 " "	185 18	.....
For 10 gallon kegs .....	15 " "	24 " "	256 80	.....
For 15 gallon kegs or half bbls.....	16½ " "	30 " "	337 28	.....+
For 20 gallon kegs or fish bbls.....	18 " "	32 " "	372 14	.....
For flour barrels .....	20 " "	38 " "	.....	\$780 00
For tight barrels.....	24 " "	42 " "	.....	950 00

Cylinder saws of other sizes than those mentioned above made to order at corresponding prices. Bilging Cylinder Saws of all sizes made to order. Prices named on receipt of inquiry giving size of saw and radius of bilge. Write for circulars and prices.

## REPAIRING SAWS.



We make a specialty of repairing saws, employing in that department expert workmen, whose experience and skill with our improved machinery and appliances, enable us to make repairs promptly and in the best possible manner.

### PARTICULAR NOTICE TO PARTIES SENDING SAWS FOR REPAIR; PLEASE OBSERVE THE FOLLOWING DIRECTIONS:

The case or package containing them should be not only plainly marked to our address, but should have upon it also the name and post-office address of the party sending them. We receive hundreds of saws for repair, and it is impossible to identify them without the *name of the owner on each*. Attention to this matter at the time of shipping will save delay and annoyance. Send by mail full instructions of work to be done, and shipping directions for the return of the saw when finished. Never fail to state whether mill saw is to be used on a right or left hand mill. **BREAKING IN REPAIRING AT OWNER'S RISK.**

**REPAIRING SAWS.****Net Prices. Not Subject to Discount.**

Diameter. Inches.	Hammering only.	Gumming and Hammering	Cutting down, re- toothi'g and Hammering	Grinding first gauge.	Grinding additional gauges. Each gauge.
4	\$0 20	\$0 25	\$0 35	\$0 10	\$0 07
5	25	35	40	15	10
6	30	40	50	15	10
7	35	45	55	25	17
8	40	55	65	30	20
9	45	60	75	35	23
10	50	65	80	40	27
12	55	75	95	40	28
14	60	90	1 20	50	33
16	75	1 05	1 30	55	37
18	80	1 20	1 45	65	44
20	90	1 30	1 60	75	50
22	1 20	1 80	2 20	80	53
24	1 30	1 95	2 40	95	63
26	1 40	2 10	2 60	1 15	77
28	1 55	2 25	2 80	1 30	87
30	1 60	2 40	3 00	1 45	97
32	2 05	3 10	3 85	1 60	1 07
34	2 20	3 30	4 10	1 75	1 17
36	2 35	3 45	4 35	1 95	1 30
38	2 45	3 65	4 55	2 10	1 40
40	2 60	3 85	4 80	2 40	1 60
42	3 40	5 05	6 30	2 80	1 87
44	3 55	5 30	6 60	2 95	1 97
46	3 70	5 55	6 95	3 05	2 03
48	3 85	5 80	7 20	3 20	2 13
50	4 00	6 20	7 50	3 35	2 23
52	5 60	8 35	10 40	3 45	2 30
54	5 80	8 65	10 80	3 60	2 40
56	6 00	8 95	11 20	3 75	2 50
58	6 20	9 30	11 60	3 85	2 57
60	6 40	9 60	12 00	4 00	2 67
62	8 30	12 40	15 50	4 15	2 77
64	8 60	12 80	16 00	4 35	2 90
66	8 80	13 20	16 50	4 40	2 93
68	9 10	13 60	17 00	4 55	3 03
70	9 35	14 00	17 50	4 75	3 17
72	9 60	14 40	18 00	4 80	3 20
74	9 90	14 80	18 50	4 90	3 27

When we Gum Saws we grind the teeth FREE.

This charge is calculated on size of Saw after cutting down.

Saws Re-ground require Hammering. See List for Hammering.

These prices are Net. When we Gum Saws we grind the teeth FREE.  
Saws re-ground require Hammering. See List for Hammering.

**REPAIRING SAWS.****Net Prices.****MILL OR MULAY SAWS.**

Re-tooothing and Hammering, each, to 5 ft., \$1.25, over 5 ft., \$1.50.  
 Hammering only, each, to 5 ft., 75c., over 5 ft., \$1.00.

**DRAG SAWS.**

Re-tooothing, Hammering and Filing, each .....	\$1 50
Hammering only, each.....	75
Setting and Sharpening only, each.....	75
Re-tooothing and Hammering only, each .....	1 00

**TAPER-GROUND SHINGLE AND HEADING SAWS.**

All sizes, Gummed and Hammered, per inch in diameter.....	\$0 15
All sizes, Hammered, per inch in diameter.....	10

**REPAIRING CROSS-CUT SAWS.**

Hammering.....	\$0 50	each.
Gumming and Hammering.....	75	"
Gumming, Hammering and Filing.....	1 00	"
Re-tooothing, Hammering and Filing .....	1 50	"
Setting and Sharpening only.....	50	"

**BAND SAW BLADES.**

Brazing wide Blade for Log Mill...\$2.00 each braze.

Hammering.....	3c per in., per in. width, per running ft.
Gumming and Tooothing .....	4c per running ft.
Filing and Swaging.....	4c per running ft.

**REPAIRING BURNED SAWS.**

The temper of burned saws can generally be restored. We make a specialty of this class of work, and rarely fail to make such saws as good as new. We undertake the work at owner's risk, though no charge will be made by us in case of failure. Please prepay freight on all such saws.

**TEMPERING, GUMMING, STRAIGHTENING AND GRINDING.**

SIZE.	PRICE.
30 inches.....	\$6 00
32 inches.....	7 00
34 inches.....	8 00
36 inches.....	8 50
38 inches.....	9 00
40 inches.....	9 50
42 inches.....	10 50
44 inches.....	12 00
46 inches .....	13 50
48 inches.....	15 00
50 inches.....	17 50
52 inches.....	20 00
54 inches.....	22 50
56 inches.....	25 00
58 inches.....	27 50
60 inches.. .	30 00
62 inches.....	34 00
64 inches.....	38 00
66 inches.....	44 00
68 inches.....	50 00
70 inches.....	58 00

All sizes under 30 inches, one-third list price for Circular Saws.

## BAND SAWS.

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### SUGGESTIONS FOR THE SUCCESSFUL USE AND CARE OF BAND SAWS.

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#### THE MILL.

The first requisite is a well constructed mill, having closely fitted bearings, perfectly balanced wheels, and sufficient weight of metal properly distributed to stand the heaviest strain put upon it, without vibration. Prevent vibration from every cause, as much as possible, by keeping the mill in perfect condition, the saws in perfect tension, and everything in good order.

#### CROWN OF WHEELS.

Wheels having too much crown are objectionable. They produce excessive vibration. The saw must be opened up through the middle to fit the crown of the wheels, therefore, requires more rolling and hammering than if the face of the wheel is flat. If the wheels have too much crown the saw is not as flat when strained. It is subject to greater friction in the guides and in the log. It cuts a wider kerf. It is more liable to crack from uneven tension when strained and from vibration. It will not make as straight lines. It will not cut as smooth lumber. Therefore, wheels with flat, or nearly flat faces are preferable. About one sixty-fourth of an inch crown in a width of 10 inches is the limit permitted.

### OPERATOR'S ROOM AND TOOLS.

If the location of the mill will permit, have the operating room well lighted from the north. Locate the anvil, etc., as shown in Figure 10.

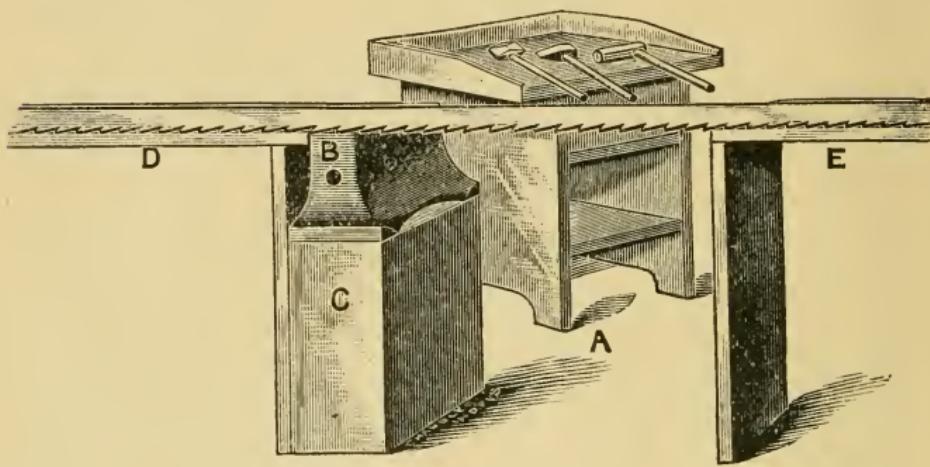


Fig. 10.

**NOTE.**—A indicates position of operator and hammer board; B anvil; C anvil block; D leveling table; E saw board.

For hand work the tools required are:

One anvil, of 80 to 100 pounds weight; one cross-face, one round-face and one twist-face hammer, weight of each about  $3\frac{1}{2}$  pounds; one five foot and one twelve inch straight-edge; one tension gauge; one leveling table; one brazing table and irons; one portable forge for heating the irons; one Victor Swage; one Pribnow Shaper, or one Combined Pribnow Swage and Shaper; one side file; one jointer; one set of pulleys and stands; one clamp for setting, swaging and jointing; round edge mill saw files.

For machine work:

One roller stretching machine; one automatic band saw sharpener; one automatic power swage; one searfing machine.

All the above we are prepared to furnish on application.

**TENSION.**

The tension should be as perfectly uniform as possible throughout the length of the blade. A fast place may cause fracture from undue strain at that point; and a loose place, from excessive vibration. The tension should be so adjusted that the saw will bear firmly upon the face of the wheels, the principal strain being near the edges of the saw. When the saw is in proper tension the central portion of the blade is expanded, or opened up, so that when the saw is raised, the middle will drop away from the straight-edge  $\frac{1}{16}$  to  $\frac{3}{16}$  of an inch, as in Figure 11.

Two methods of testing for tension are in use. In the first method the operator raises the saw while the straight edge is held firmly

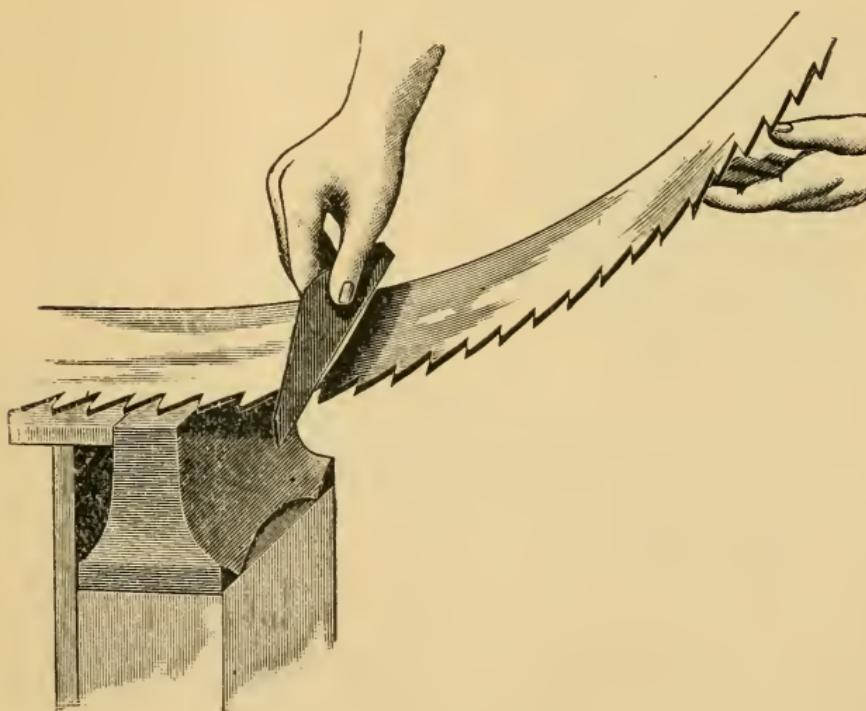


Fig. 11.

**NOTE.—FIRST METHOD.** The central portion being in proper tension, drops from the straight-edge when the saw is raised. If too open, roll or hammer with the round-face hammer along both edges on both sides of the saw.

across it, and the loose or open places will drop away from the straight-edge (as in Fig. 11), and the fast or firm places will be drawn to the straight-edge (as in Fig. 12). This is the method in common use, and is the most convenient.

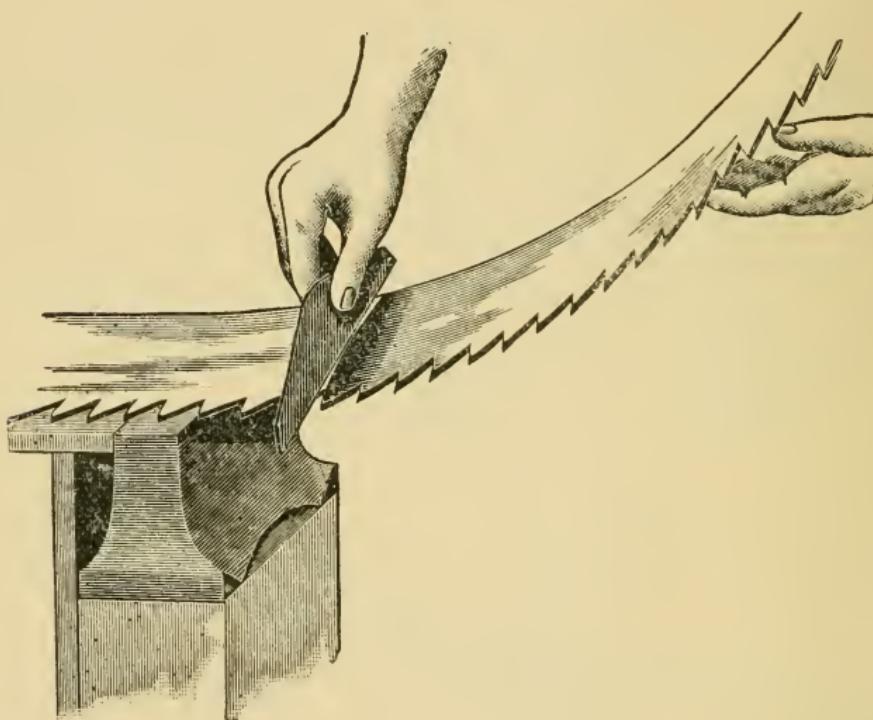


Fig. 12.

NOTE.—FIRST METHOD. The central portion being fast and requires opening up, is drawn to the straight-edge when the saw is raised. These fast places require rolling, or hammering with the round-face hammer on both sides of the saw.

In the second method the saw is pressed down by the operator (as in Fig. 13), and in this method the loose places are drawn to the straight-edge (Fig. 13), and the fast or firm places drop away from it (Fig. 14). Some experts claim this method, although more difficult to operate, will disclose variations of tension, even the smallest loose and fast places, which could not be detected by the first method.

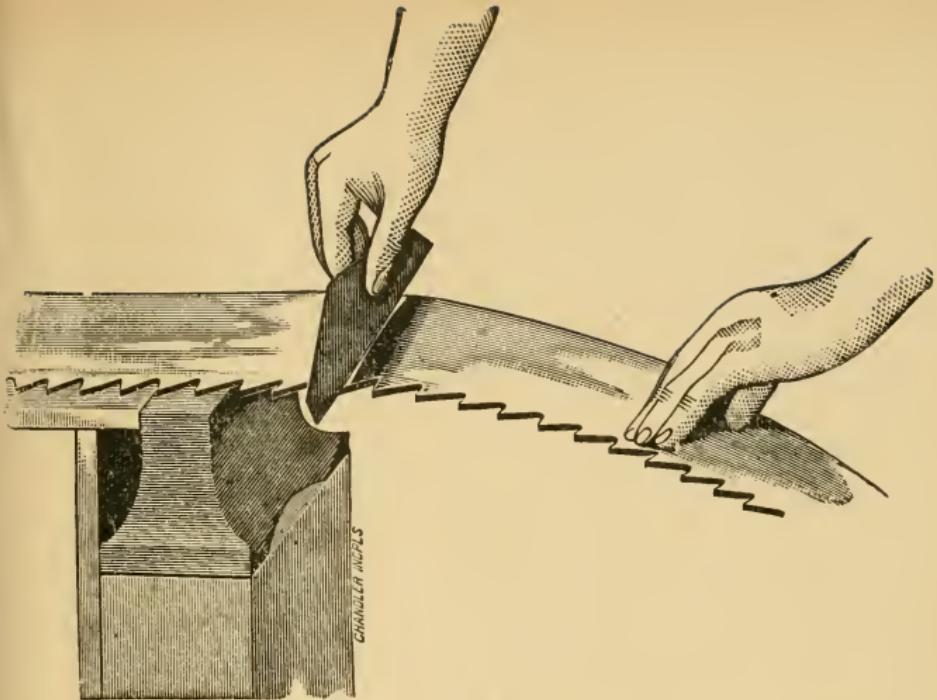


Fig. 13.

NOTE.—SECOND METHOD. The open or loose places are drawn to the straight-edge when the saw is pressed down. If too open, roll or hammer with the round-face hammer along both edges on both sides of the saw

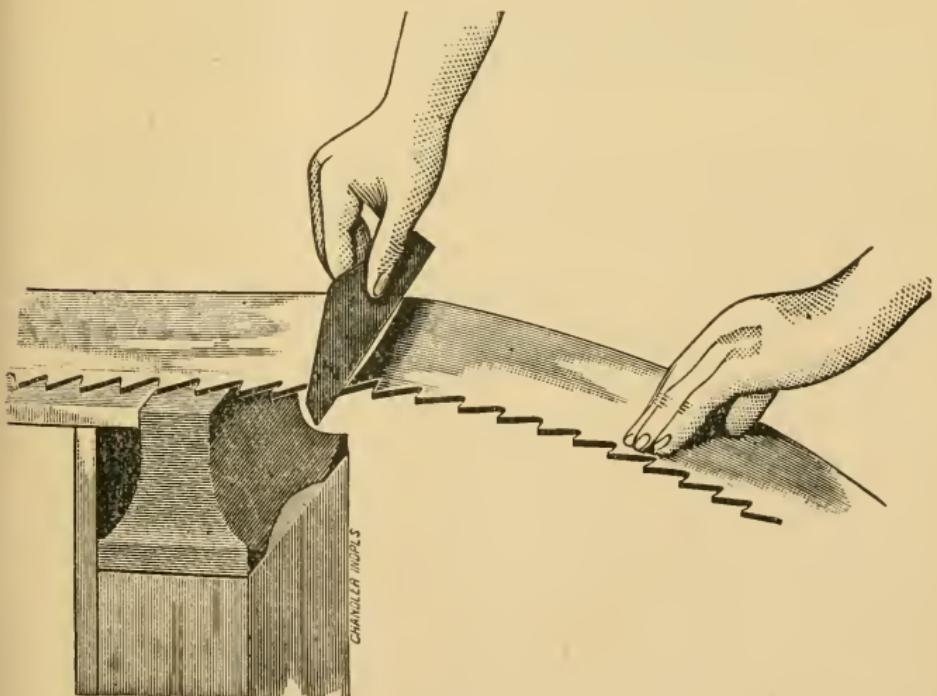


Fig. 14.

NOTE.—SECOND METHOD. The fast or firm places drop away from the straight-edge when the saw is pressed down. These fast places require opening up with the rolls, or round-face hammer. Hammer on both sides of the saw.

To increase the tension, open up the center or body of the saw by rolling or hammering (see dotted lines Fig. 16). If the rolls are used, some hammering will be required after rolling, to even up the tension so as to make it uniform throughout the length of the blade. The greatest tension should be in the middle of the blade, decreasing gradually to within a short distance from the edges, say  $\frac{3}{4}$  to  $1\frac{1}{2}$  inch on the back edge, and 1 to 2 inches on the tooth edge.

The wider the saw and the heavier the work to be done, the wider the firm band on the edge should be. This is evident when it is remembered that a 12-inch band saw is subjected to a strain of from six to seven tons in use, in addition to the strain of the cut. By this means a narrow, firm band extends the length of the saw, along each edge, which receives the principal strain.

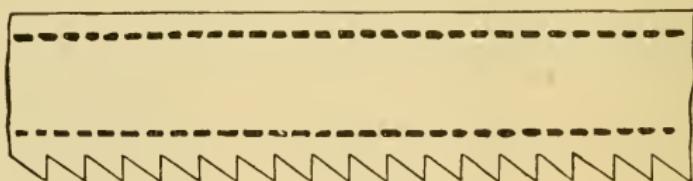


Fig. 15.

**NOTE**—If the saw is too open reduce the tension by rolling, or hammering with the round-face hammer on both sides of the saw, near both edges, as indicated by the dotted lines.

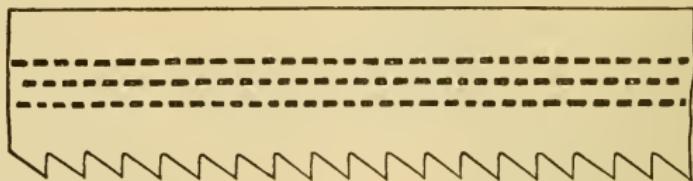


Fig. 16.

**NOTE.**—To open the saw and give it more tension, roll or hammer with the round face hammer along the central portion of the saw indicated by the dotted lines.

If the saw has too much tension, that is to say, is opened up too much through the center, the tension may be decreased by hammering near the edges of the saw, on both sides (see dotted lines on Fig. 15).

The round-face hammer is used for tensioning; light strokes should be used, and the hammering done equally on both sides of the saw. Keep at least  $\frac{1}{2}$  of an inch from the edge of the saw. Test frequently with the straight-edge or tension gauge. Hammer as little as possible. No heavy blows should be struck, and the hammer faces should be nearly flat. The tension must be adjusted to suit the crown of the wheel and feed used, the drop from the level in testing varying from  $\frac{1}{16}$  to  $\frac{3}{16}$  of an inch in ten inches wide. In hammering and rolling a band saw to adjust the tension, all the work must be done on the fast or firm part of the blade. The tension gauge (Fig. 17), with the edges curved to suit the crown of wheels and feed used, will be found useful in testing for tension, and if the saw is in proper tension, and the saw raised by the operator, the blade should fit the curve of the tension gauge.



TENSION GAUGE. Fig. 17.

NOTE.—The tension gauge may be made with curves of different diameter on its edges. If the tension gauge is of the proper curve for your mill the saw when raised, if in proper tension, would fit the curve of the gauge.

#### TWISTS AND LUMPS.

These are detected by the use of the short straight-edge while the saw rests on the leveling table, and are removed by hammering lightly with the cross-face and twist-face hammers. The faces of these hammers should be nearly flat. Heavy blows and sharp hammers are sure to crystallize the steel and cause fracture at the point of contact. Lay the saw upon the leveling table, examine it by passing a straight-edge over it at different angles. Whenever ridges appear, trace their direction, or the angle at which they run along the surface of the saw, and mark same with a piece of chalk. Draw the part which

shows lumps or twists over the anvil, and hammer down the ridges. In hammering down the ridges the face of the hammer should always run in the direction of the ridge.

#### STRAIGHTENING THE BACK.

Use the five foot straight-edge on the back of the saw. While it rests on the leveling table, mark the extent of the curve with the chalk.

The back of the saw may be drawn to a straight line or a true outward curve, by using the round-face hammer upon and near the edge, carrying the blows into the central portion of the saw (Fig. 18), and so preventing unequal expansion, and leaving the saw open. Or better, by the use of the rolls in the same way.

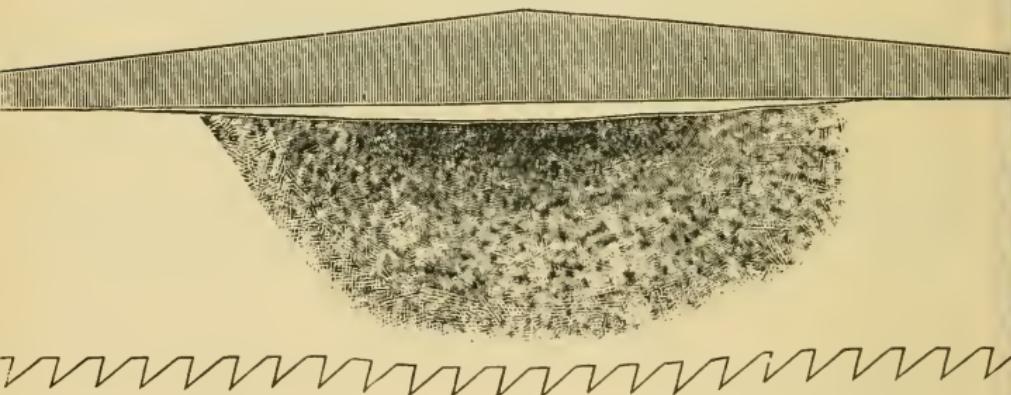


Fig. 18.

NOTE.—If the back of the saw curves from the straight-edge, as shown, roll or hammer with the round-face hammer on both sides of the saw, as shown in the shading, until the back shows rounding about  $\frac{1}{16}$  to  $\frac{1}{8}$  inch in 15 feet. A convenient method of testing the curve is to place two iron pins 15 feet apart, and one pin central between the others on the curve you find operates best on your mill, which should not exceed  $\frac{1}{16}$  of an inch in 15 feet. By moving the saw along with the back resting against the pins, every section of the saw may be gauged to a true curve, suitable for your mill.



SHORT STRAIGHT-EDGE. Fig. 19.

NOTE.—For testing saw for twists and lumps on leveling table, and when hung on the wheels. Also used in testing saw for tension, as illustrated in Figures 11 and 12, First Method, and 13 and 14, Second Method. In testing with straight-edge for tension, the space between the straight-edge and saw through which the light passes, should be the same throughout the entire length of the saw, and there should be no places where the tension varies from the center, or is too close to the edge of the saw.

If the back of the saw is too rounding, the hammering or rolling must be done upon the toothed edge. LIGHT BLOWS should be used, and both sides of the saw hammered equally, care being taken not to give heavy blows on the extreme edge of the saw, which may cause fracture.

It is desirable that the toothed edge should be strained a little tighter than any other portion of the saw. To accomplish this, and preserve uniformity of tension, the back of the saw should be rolled or hammered to a curve, showing about  $\frac{1}{2}$  inch in 5 feet, or  $\frac{1}{8}$  inch in 15 feet rounding, then by tilting the upper wheel so that the saw has a uniform pressure all across the blade, this will secure a tightly strained tooth edge without subjecting the saw to undue strain upon the edge, caused by an all tilt movement.

Do not permit the back of the saw to touch the back guide wheel. If it becomes case hardened by running against the guide wheel, hold a piece of soft emery wheel against the back edge, while moving slowly, and so remove the case-hardened portion at once.

The strain put upon the saw in the best constructed mills is rarely over 5,000 to 12,000 pounds, and should be only sufficient to prevent slipping on the wheels. The use of the roller or stretching machine for putting in tension and regulating the curve of the back

is preferable to all hammering, but the use of the hammer after rolling is necessary to insure the perfect adjustment of tension.

To arrest cracks and prevent their extension into the blade, punch a small hole at the extreme end of the fracture.

### TABLE OF STRAIN FOR BAND SAWS.

COMPILED FROM STANDARD AUTHORITIES.

SIZE.	GAUGE.	POUNDS.	SIZE.	GAUGE.	POUNDS.
<i>Inches.</i>					
6	16	4,212	9	15	6,993
6	17	3,756	9	16	6,318
6	18	3,174	10	13	10,260
6	19	2,718	10	14	8,960
6	20	2,268	10	15	7,770
7	15	5,439	11	13	11,286
7	16	4,914	11	14	9,856
7	17	4,382	11	15	8,547
8	14	7,168	12	13	12,312
8	15	6,216	12	14	10,752
8	16	5,616	12	15	9,324
9	14	8,064			

### FEED, PITCH OF TEETH AND CLEARANCE.

These are important features in the use of Band Saws.

The speed should be maintained at a uniform rate. Sudden and excessive increase is liable to result in fracture of the saw. Under heavy feed the pitch of the teeth should be in corresponding ratio, say from 4 to  $6\frac{1}{2}$  inches in ten inches width of saw, and the clearance on the back of the tooth maintained at a proper angle to the pitch. If the pitch and clearance are maintained at the proper ratio, the saw will run steady on the wheels without lateral motion, and if properly tensioned, seldom, if ever, touch the back guide wheel or run off the wheels. This matter of pitch and clearance has been deemed of sufficient consequence to be made the subject of an elabo-

rate geometrical claim in patent No. 521,343, by Dexter Hazzard. Variations from the formula laid down are admissible in different kinds of timber and under varying requirements.

### SHAPE AND SWAGING OF TEETH.

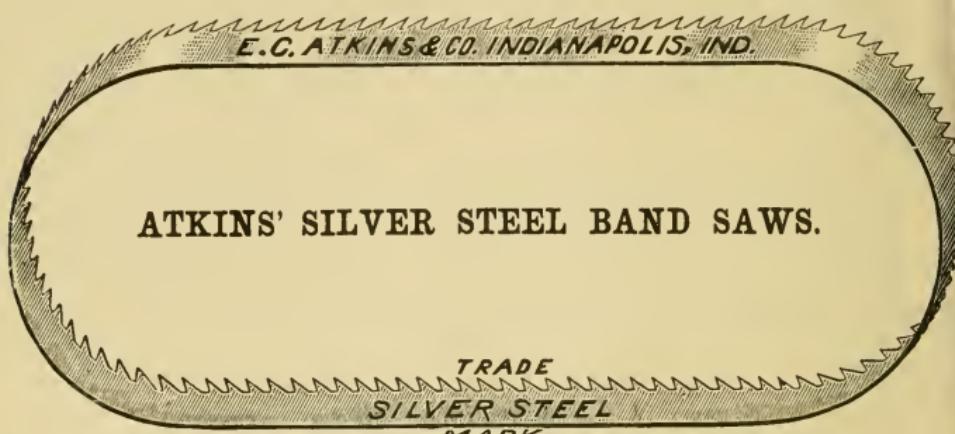
The teeth should be as short as will afford proper dust room, and gullets always round ; no sharp corners to invite fracture. Long teeth vibrate in the cut, and vibration from any cause is ruinous to successful band saw practice. In band swaging we advise the use of the Pribnow Combined Swage and Shaper, or the Victor (Parke) Swage, to be followed by the Pribnow Shaper. The shaper insures a perfect shape of point, having the under cut or bevel from outside of point to blade, essential to perfect lines and smooth work.

### OUR SILVER STEEL.

We can assure our patrons that the Silver Steel used in our Band Saws, and made on formulas expressly for us, is not excelled by any other steel, and the saws with proper usage will wear out without fracture. Fluxes, such as Aluminum, and alloys, such as Nickel, are useful, and are used in the manufacture of our steels, but these things in the absence of high grade material and the proper per centage of carbon, will not produce fine steel having the qualities of toughness, elasticity and edge-holding qualities characteristic of our HIGH GRADE SILVER STEEL, which we guarantee superior to any in these essential particulars, as well as our superior method of manufacture.

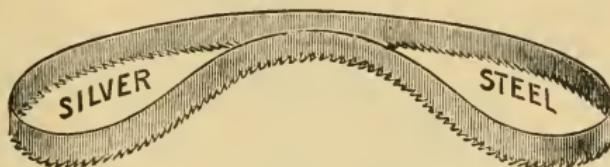
## ATKINS' SILVER STEEL BAND SAWS.

Every saw is joined, filed, set and fitted ready to go on the mill without further hammering.



### LIST PRICES.

Width.	Usual Gauge.	Per Running Foot.
2    inches.	17 to 19	\$0 50
2½    "	17 to 19	65
3    "	17 to 19	80
3½    "	17 to 19	1 00
4    "	16 to 18	1 20
4½    "	16 to 18	1 35
5    "	16 to 18	1 50
5½    "	16 to 18	1 65
6    "	15 to 17	1 80
7    "	15 to 17	2 15
8    "	14 to 16	2 50
9    "	14 to 16	3 00
10    "	14 to 16	3 50
11    "	14 to 16	4 20
12    "	14 to 16	5 00
13    "	13 to 15	6 00
14    "	13 to 15	7 00

**NARROW BAND SAWS.****FOR RE-SAWING AND SCROLL SAWING.**

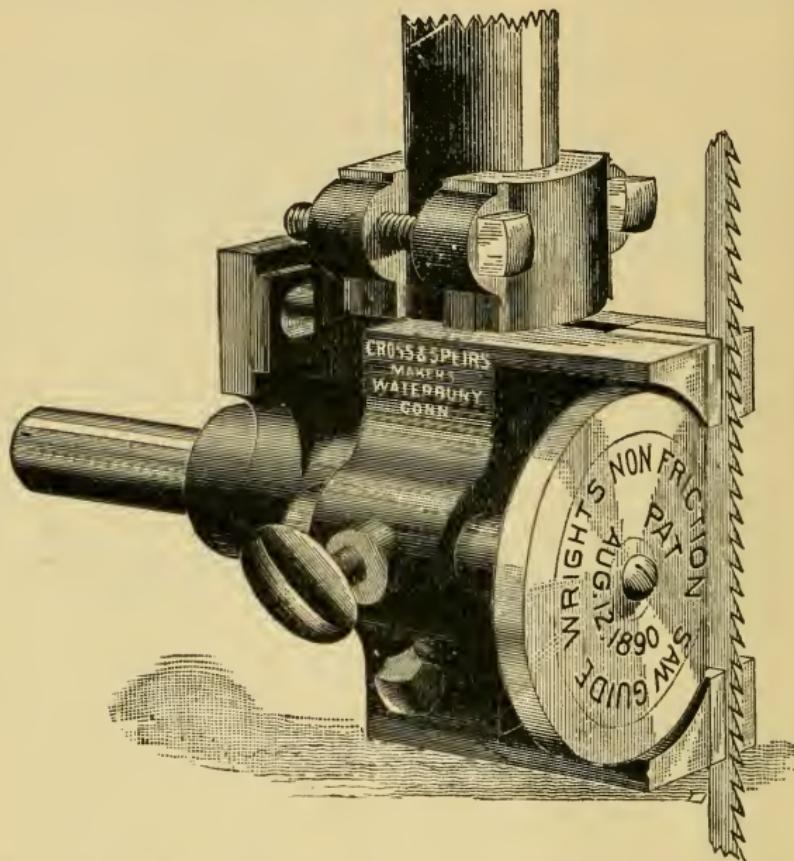
Inches.		Per Foot.
$\frac{1}{8}$	Not joined .....	\$0 06
$\frac{3}{16}$	" .....	07
$\frac{1}{4}$	" .....	08
$\frac{3}{8}$	" .....	09
$\frac{1}{2}$	" .....	10
$\frac{5}{8}$	" .....	12
$\frac{3}{4}$	" .....	14
$\frac{7}{8}$	" .....	17
1	" .....	20
$1\frac{1}{8}$	" .....	24
$1\frac{1}{4}$	" .....	28
$1\frac{3}{8}$	" .....	32
$1\frac{1}{2}$	" .....	36
$1\frac{3}{4}$	" .....	40

Filing and setting, 5 cents per foot extra.

**BRAZING.**

Brazing .....	$\frac{1}{4}$ to $\frac{1}{2}$ inch.....	$\frac{5}{8}$ to $\frac{7}{8}$ inch.....
Price .....	30 cents .....	40 cents.
Brazing .....	1 to $1\frac{1}{2}$ inch.....	$1\frac{3}{8}$ to $1\frac{1}{2}$ inch.
Price .....	50 cents .....	65 cents.

## WRIGHT'S NON-FRICTION BAND-SAW GUIDE.



### A FEW REASONS WHY THESE GUIDES ARE SUPERIOR TO OTHERS.

**BECAUSE**—We avoid friction, avoid using oil, at the same time having a good, firm support for the saw.

**BECAUSE**—It is instantly adjusted to any width or thickness of saws.

**BECAUSE**—We have narrow side guides above and below the back-bearing which are spread apart, preventing the side of the saw from heating.

**BECAUSE**—The wearing parts are so constructed, should they become broken or lost, they can be replaced at a mere trifle.

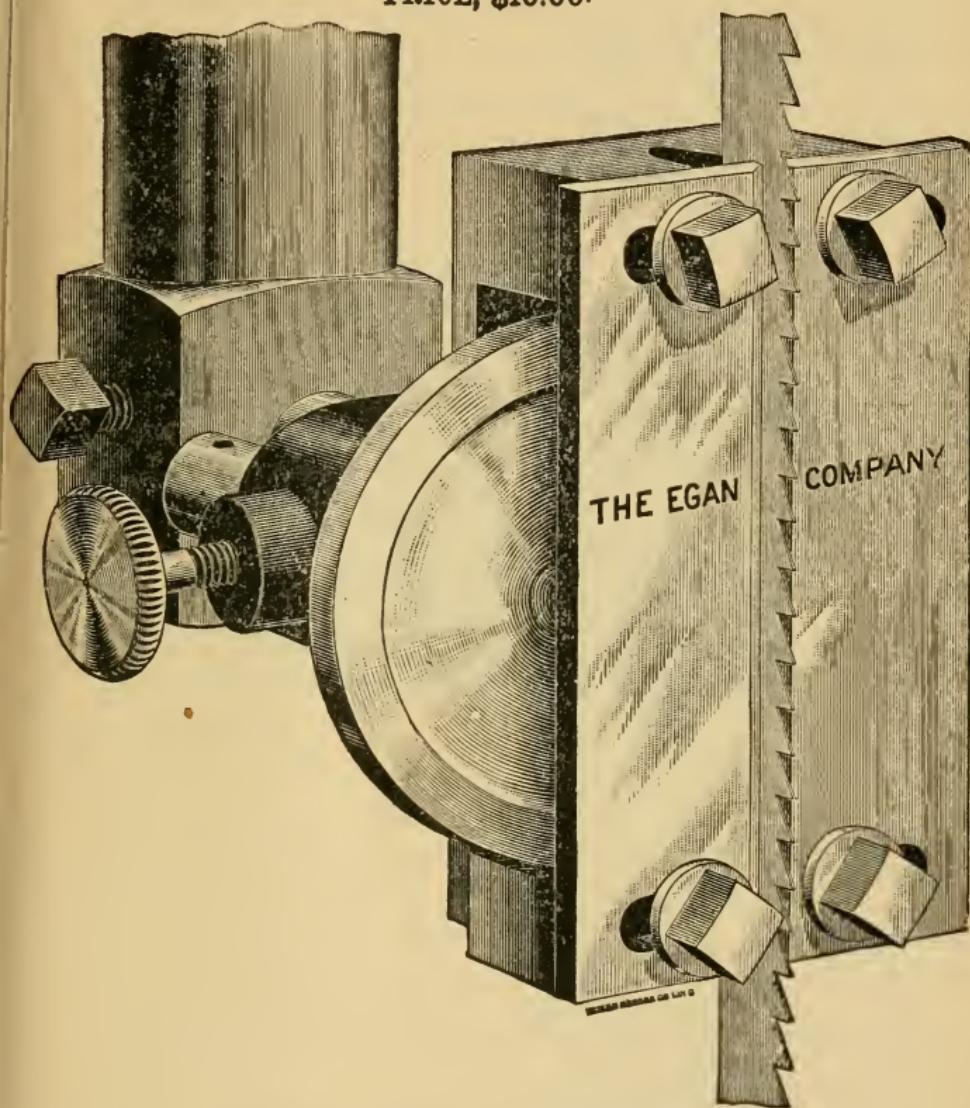
**BECAUSE**—They can be readily attached without injury to the machine; and if not found just as represented, may be returned.

**Price of Small Guide**, taking saw from one inch in width to

one-sixteenth ..... \$10.00 Net.

**Price of larger sizes will be given on application**, depending upon width of saws used, and difficulty of applying to machine.

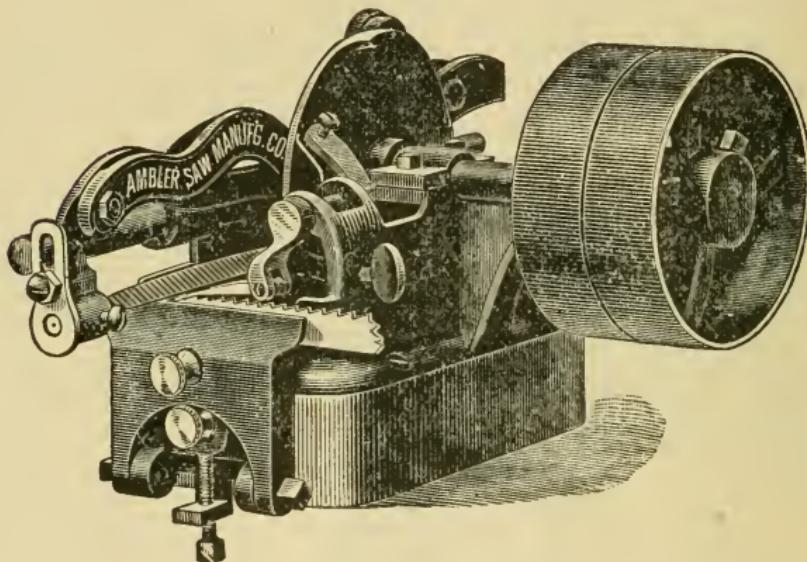
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**EGAN BAND SAW GUIDE.  
PRICE, \$10.00.****DESCRIPTION OF ROLLER GUIDE.**

The roller is made of hardened steel and perfectly true to size and shape, and is attached to a spindle of same material running in a close-fitting sleeve and so arranged that all bearings are easily oiled and secure from escape. The frame holding the side guides is adjustable to and fro for the various widths of blades by means of the thumb screw as seen in the cut. The back of the saw blade has a very long bearing across the face of the roller, thus providing for the least amount of friction and spreading it over the largest surface possible, which thereby prevents the crystallization that causes the breakage of saws through heat and friction. The side guides are extra long and of hardened steel, supporting the sides of the saw blade in the most approved manner, and which results in an improved action of the saw in many ways, especially with respect to breakage and twisting or running. These side guides are adjustable sidewise with a wrench, and are movable to the blade or from it, as desired, to suit the various widths of saws, so that at all times the saw blade is held rigid the full width and close to the teeth of the same.

## THE AMBLER PERFECT FILING MACHINE FOR BAND SAWS.

---



### WHAT IT WILL DO.

It will file your saws without your attention.

It will save you 50 per cent. in the cost of files.

It will file saws sharper than by hand.

It will encourage your men to keep them sharp.

It will thus save your saws from breakage.

It will pay for itself in a few months.

These things appeal strongly to the good sense of every business man, for they show a better margin than can be made on investments in lumber or stock.

Price..... \$35 00

## MULAY SAWS.

FOR THE CHANDLER & TAYLOR SIDE-CUTTING MULAY SAW MILL.



No. 7 Gauge	Price per foot, \$2 75
No. 8 Gauge	Price per foot, 2 50
No. 9 Gauge	Price per foot, 2 25

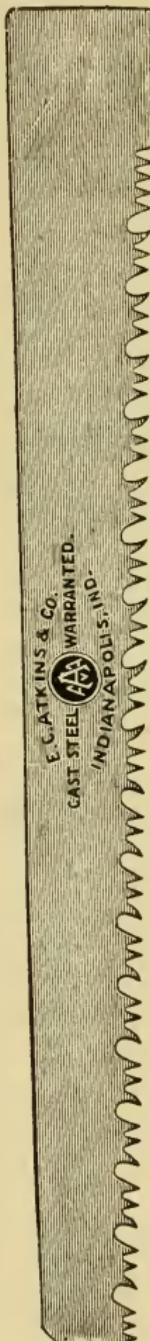
GANG SAWs.

MADE FROM SILVER STEEL.



If swaged only, deduct 5 cents per foot from list.  
If not swaged deduct 10 cents per foot from list.

**DRAG OR BUTTING SAWS.**  
**PATENT TEMPERED SPECIAL STEEL.**



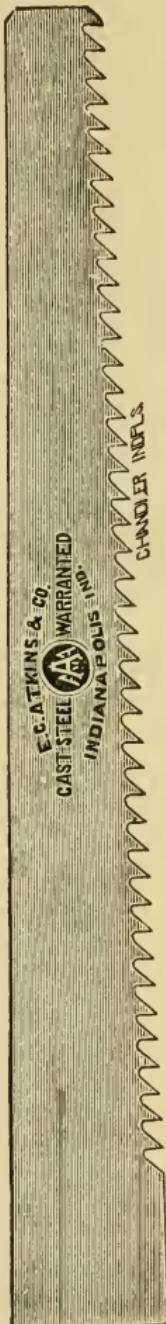
SINGLE HOOK.

E. C. ATKINS & CO.  
 CAST STEEL WARRANTED.  
 INDIANAPOLIS, IND.



MILL TOOTH.

E. C. ATKINS & CO.  
 CAST STEEL WARRANTED.  
 INDIANAPOLIS, IND.



TUTTLE TOOTH.

Tapered 10 in.	butt, 8 in. point, 8 gauge, per foot	\$1.60	Tapered 7 in. butt, 5 in. point, 11 gauge, per foot	... \$1.10
" 10 "	8 "	1.55	" 7½ "	10 "
" 9 "	7 "	1.60	" 7½ "	11 "
" 8 "	6 "	1.45	Equal width, 8 in. 10 gauge, per foot	..... 1.45
" 7 "	5 "	1.25	" 9 "	1.55
		1.20	" 10 "	1.75
		1.15	" 12 "	2.00
			Filed and set, add 10 cents per foot to list.	

Saws over 7 feet long, use Lance Tooth List.

**MULAY SAWs.**

Gauge.	4	5	6	7	8	9
10 in. wide, per foot .....	\$3 15	\$3 00	\$2 75	\$2 40	\$2 20	\$1 90
11 " " .....	3 50	3 30	3 00	2 75	2 40	2 20
12 " " .....	3 85	3 50	3 30	3 00	2 75	2 40

**MILL SAWs.**

Gauge.	5	6	7	8	9	10
8 in. wide, price per foot .....	\$2 20	\$2 10	\$1 90	\$1 75	\$1 65	\$1 55

**LANCE TOOTH DRAG SAWs.**

Width.	5 Ga.	6 Ga.	7 Ga.	8 Ga.	9 Ga.	10 Ga.	
8 inches.....					\$1 75	\$1 65	\$1 45
9.....			\$2 20	2 00	1 75	1 55	
10.....		2 55	2 20	2 00	1 75		
12.....	\$3 30	3 00	2 65	2 40	2 20		
14.....	\$4 40	4 00	3 65	3 30	3 00	2 65	
16.....	4 85	4 50	4 20	3 85	3 55	3 20	
Tapered 8 in. butt, 6 in. point.....				1 55	1 45	1 35	

Saws over 8 feet long extra Price.

**PIT SAWs.**

Length .....	5 ft. Each.	5½ ft. Each.	6 ft. Each.	6½ ft. Each.	7 ft. Each.	7½ ft. Each.	8 ft. Each.
Price.....	\$5 00	\$5 50	\$6 00	\$6 50	\$7 00	\$7 50	\$8 00

Boxes for Pit Saw, \$1.00 each. Tillers, \$1.25 each.

**WHIP SAWs.**

Length.....	5 ft. Each.	5½ ft. Each.	6 ft. Each.	6½ ft. Each.	7 ft. Each.	7½ ft. Each.
Price .....	\$3 00	\$3 30	\$3 60	\$3 90	\$4 20	\$4 50

## CROSS-CUT SAWS.

---

The high standard of excellence attained for the Atkins Cross-Cut Saws is the result of years of experience and practical tests of methods, appliances and steel used in their production.

We have introduced all the recognized improvements in Cross-Cut Saws; prominent among these are the original Tuttle Tooth, Silver Steel Diamond and Dexter. These stand at the head of fine, fast-cutting saws.

We are prepared to say that there are no results obtained by any method of grinding saws that have not been accomplished in our factory. Our method of tempering is the most approved known, dispensing almost entirely with hammering, and securing absolute *uniformity of temper* throughout the entire length of the saw, and of any number of saws. Every saw is carefully tested for temper and fitted perfectly for use before shipment. We assure our patrons, and those desiring to purchase, that we shall continue to maintain this high standard.

### INTERESTING FACTS.

An examination of the following pages, and a practical test of the merits of our saws, substantiate the claim that, in quality of material and temper; in perfect fitting for use; in general finish and appearance; in the great variety of styles; in adaptability to all sections and kinds of timber; in fast cutting and light running qualities, our line of Cross-Cut Saws is unequaled by any American or foreign manufacturer.

### CAUTION.

The fine qualities of the Atkins high grade saws have been appreciated by lumbermen and sawyers, causing a large demand for our leading brands of cross-cut saws. This has led manufacturers of inferior goods to imitate saws of our manufacture. Beware of these imitations and see that the brand, E. C. Atkins & Co., is on every saw.

### OUR REGISTERED TRADE-MARKS.

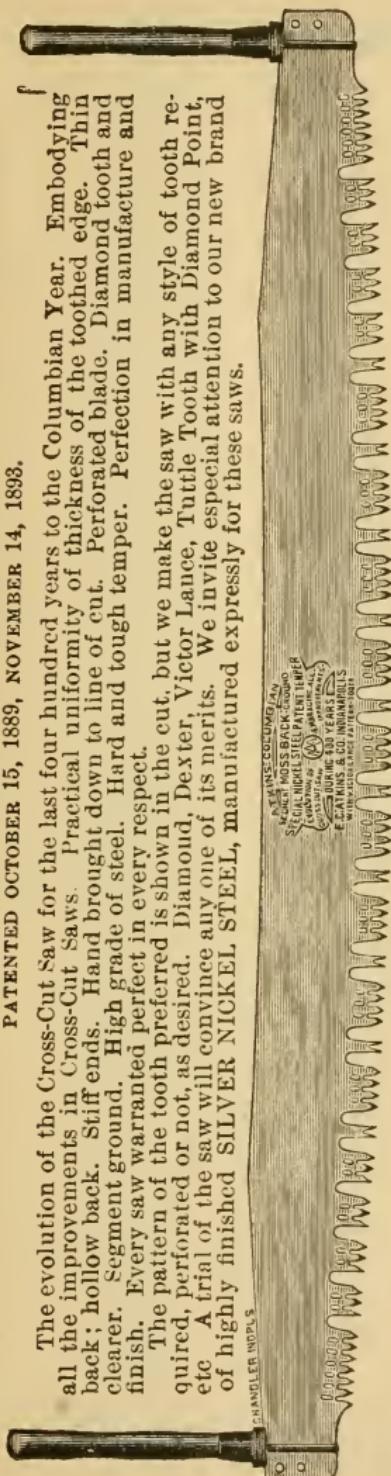
"Silver Steel,"	"Segment Ground,"
"Dexter,"	"Rex,"
"Effigy of a Horse,"	"Victor Lance,"
"Diamond,"	"Diamond Point."
"Effigy of a Diamond,"	

## ATKIN'S COLUMBIAN.

PATENTED OCTOBER 15, 1889, NOVEMBER 14, 1893.

The evolution of the Cross-Cut Saw for the last four hundred years to the Columbian Year. Embodying all the improvements in Cross-Cut Saws. Practical uniformity of thickness of the toothed edge. Thin back; hollow back. Stiff ends. Hand brought down to line of cut. Perforated blade. Diamond tooth and clearer. Segment ground. High grade of steel. Hard and tough temper. Perfection in manufacture and finish. Every saw warranted perfect in every respect.

The pattern of the tooth preferred is shown in the cut, but we make the saw with any style of tooth required, perforated or not, as desired. Diamond, Dexter, Victor Lance, Tuttle Tooth with Diamond Point, etc. A trial of the saw will convince any one of its merits. We invite especial attention to our new brand of highly finished SILVER NICKEL STEEL, manufactured expressly for these saws.



## COLUMBIAN SAW.

		Price Silver Nickel Steel, 14 x 18 Gauge, with Handles.		Any Style of Tooth.	
4 ft.	5 ft.	5½ ft., \$5 20	\$6 40	6 ft., \$7 00	6½ ft., \$7 60
4½ ft.	5 ft.	5½ ft., \$5 80	\$6 40	6 ft., \$7 20	7 ft., \$8 80
Price Special Nickel Steel, 14 x 18 Gauge, without Handles.		Lance, Diamond, Tuttle Tooth with Diamond Point, not Perforated.		7 ft., \$8 92	
4 ft.	5 ft., \$2 52	5½ ft., \$3 08	\$3 36	6 ft., \$3 64	7½ ft., \$4 20
4 ft.	5 ft., \$2 70	5½ ft., \$3 30	\$3 60	6 ft., \$3 90	8 ft., \$4 48
Dexter, not Perforated.		Perforated.		7 ft., \$4 50	
4 ft.	5 ft., \$3 60	5½ ft., \$4 00	\$4 80	6 ft., \$5 20	7½ ft., \$6 00
4 ft.	5 ft., \$3 78	5½ ft., \$4 20	\$5 04	6 ft., \$5 46	8 ft., \$6 40
4 ft.	5 ft., \$3 86	5½ ft., \$4 62	\$5 88	7 ft., \$6 30	8 ft., \$6 72

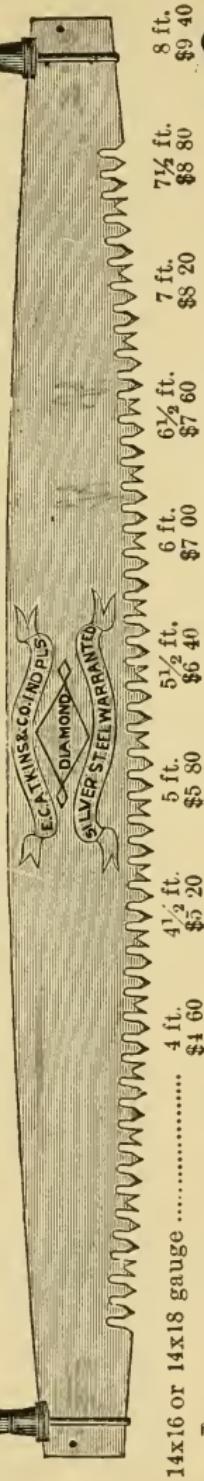
## ATKINS' SILVER STEEL DIAMOND CROSS-CUT.

### THE KING OF SAWS.

We are the sole manufacturers of Silver Steel Saws and enjoy the distinction of not only having first introduced the best Saws, among which are the Tutte, Diamond and Dexter, but of improving and maintaining the quality of Saws to a degree which challenges comparison.

#### Silver Steel Saws, with Handles and Raker Gauge.

		14x16 or 14x18 gauge .....	4 ft.	4½ ft.	5 ft.	5½ ft.	6 ft.	6½ ft.	7 ft.	7½ ft.	8 ft.
			\$4 60	\$5 20	\$5 80	\$6 40	\$6 00	\$7 60	\$8 20	\$8 80	\$9 40



## ATKINS' CONCAVE TOOTH DEXTER.

### SPECIAL SELECTED STEEL—PATENTED.

Second only to the Silver Steel Diamond, and equal to it when made of the same class of steel, is the PATENT CONCAVE TOOTH DEXTER. The patient by which this saw is protected consists of a depression of the face of the cutting teeth through the center from point to base, thus removing all friction while in use, giving strength and stiffness to the teeth and increasing three-fold the durability of the set. This saw never fails to give the best satisfaction.

		THIN BACK (SHEFFIELD SAW WORKS) Concave Tooth	PRICE, WITHOUT HANDLES
Thin Back, 14x18 gauge .....	4 ft.	4½ ft.	5 ft.      5½ ft.      6 ft.
		\$3 20	\$4 00      \$4 40      \$4 80
Regular, 14x16 gauge.....	4 ft.	4½ ft.	5 ft.      5½ ft.      6 ft.
		\$3 04	\$3 42      \$3 80      \$4 18

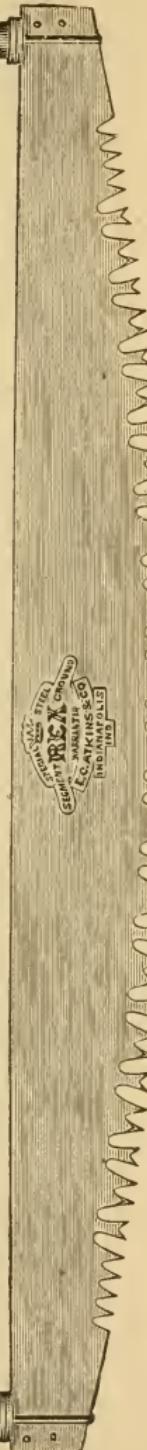
**REX SEGMENT GROUND.**

Patented Oct. 15, 1889.

14 Gauge on Tooth Edge.

16 Gauge on Ends on Back Edge.

19 Gauge at Center on Back Edge.

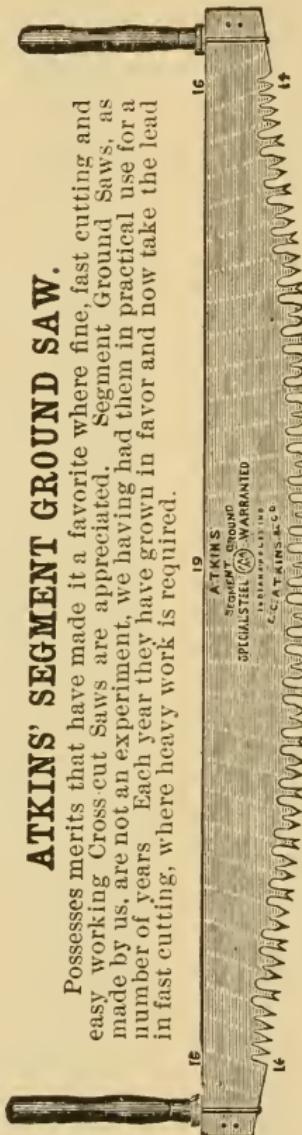


4 ft.,	$4\frac{1}{2}$ ft.,	5 ft.,	$5\frac{1}{2}$ ft.,	6 ft.,	$6\frac{1}{2}$ ft.,	7 ft.,	$7\frac{1}{2}$ ft.,	8 ft.
\$3 20	\$3 60	\$4 00	\$4 40	\$4 80	\$5 20	\$5 60	\$6 00	\$6 40

14x19 Gauge.....

**ATKINS' SEGMENT GROUND SAW.**

Possesses merits that have made it a favorite where fine, fast cutting and easy working Cross cut Saws are appreciated. Segment Ground Saws, as made by us, are not an experiment, we having had them in practical use for a number of years. Each year they have grown in favor and now take the lead in fast cutting, where heavy work is required.



4 ft.,	$4\frac{1}{2}$ ft.,	5 ft.,	$5\frac{1}{2}$ ft.,	6 ft.,	$6\frac{1}{2}$ ft.,	7 ft.,	$7\frac{1}{2}$ ft.,	8 ft.
\$3 20	\$3 60	\$4 60	\$4 40	\$4 80	\$5 20	\$5 60	\$6 00	\$6 40

14x19 Gauge .....

**ATKINS' CAST STEEL DIAMOND.**

Regular, 14x16 gauge.....	4 ft. \$2 08	4½ ft. \$2 34	5 ft. \$2 60	5½ ft. \$2 86	6 ft. \$3 12	6½ ft. \$3 38	7 ft. \$3 64	7½ ft. \$3 90	8 ft. \$4 16
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ATKINS' DIAMOND TOOTH  
SPECIAL STEEL  
WARRANTED  
INDIANAPOLIS, IND.

**"ATKINS' THIN BACK" CAST STEEL DIAMOND.**

Thin Back, 14x18 gauge.....	4 ft. \$2 24	4½ ft. \$2 52	5 ft. \$2 80	5½ ft. \$3 08	6 ft. \$3 36	6½ ft. \$3 64	7 ft. \$3 92	7½ ft. \$4 20	8 ft. \$4 48
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ATKINS' THIN BACK  
DIAMOND TOOTH  
SPECIAL STEEL  
WARRANTED  
INDIANAPOLIS, IND.

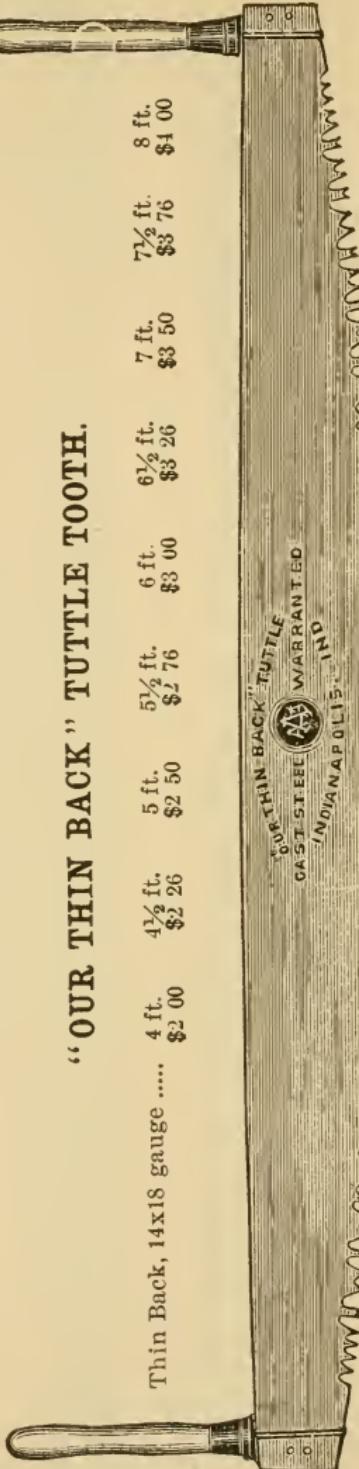
## ATKINS' TUTTLE TOOTH.

Regular, 14x16 gauge .....	4 ft. \$1 84	4½ ft. \$2 08	5 ft. \$2 30	5½ ft. \$2 54	6 ft. \$2 76	6½ ft. \$3 00	7 ft. \$3 22	7½ ft. \$3 46	8 ft. \$3 68
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## “OUR THIN BACK” TUTTLE TOOTH.

Thin Back, 14x18 gauge .....	4 ft. \$2 00	4½ ft. \$2 26	5 ft. \$2 50	5½ ft. \$2 76	6 ft. \$3 00	6½ ft. \$3 26	7 ft. \$3 50	7½ ft. \$3 76	8 ft. \$4 00
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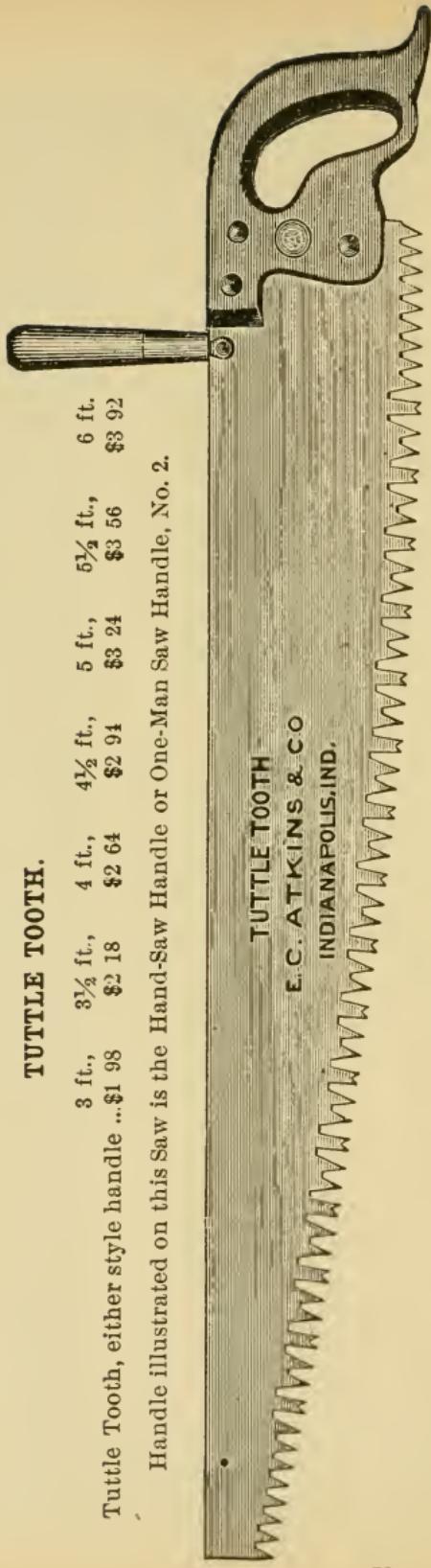


## ATKINS' ONE-MAN CROSS-CUT SAWS.

### TUTTLE TOOTH.

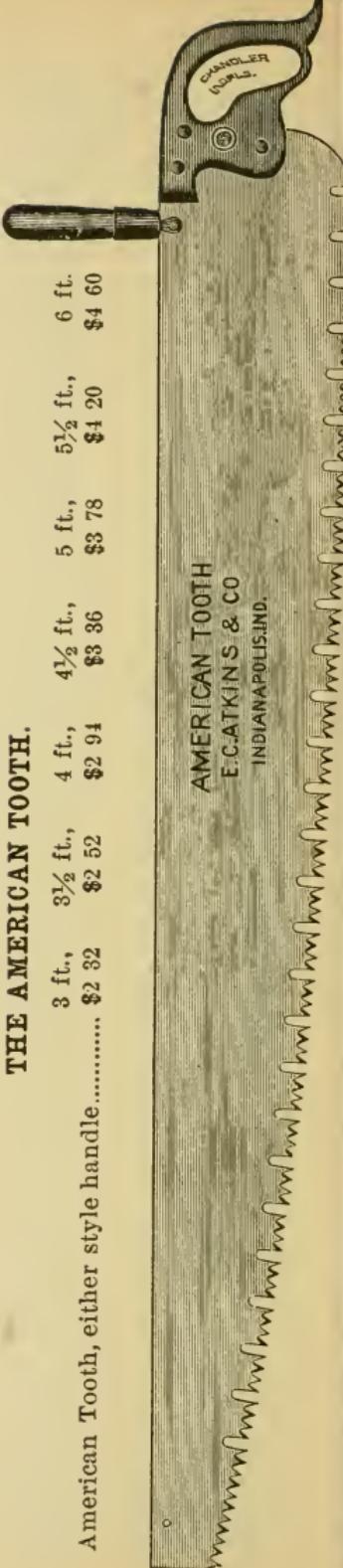
3 ft.,	3½ ft.,	4 ft.,	4½ ft.,	5 ft.,	5½ ft.,	6 ft.
Tuttle Tooth, either style handle .....	\$2 18	\$2 64	\$2 94	\$3 24	\$3 56	\$3 92

Handle illustrated on this Saw is the Hand-Saw Handle or One-Man Saw Handle, No. 2.



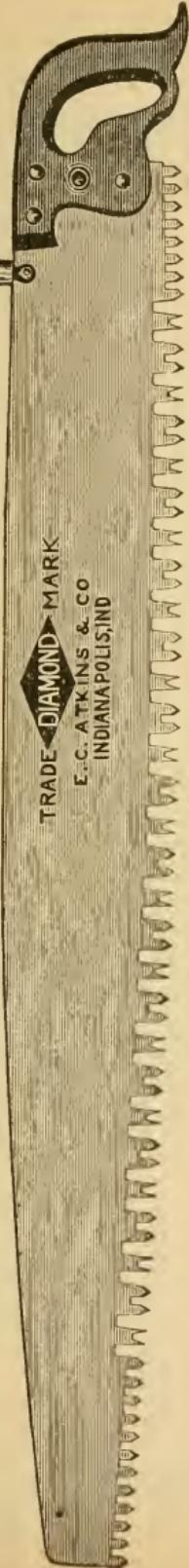
### THE AMERICAN TOOTH.

3 ft.,	3½ ft.,	4 ft.,	4½ ft.,	5 ft.,	5½ ft.,	6 ft.
American Tooth, either style handle .....	\$2 32	\$2 52	\$2 94	\$3 36	\$3 78	\$4 20



ATKINS' ONE-MAN CROSS-CUT SAW.

DIAMOND TOOTH.

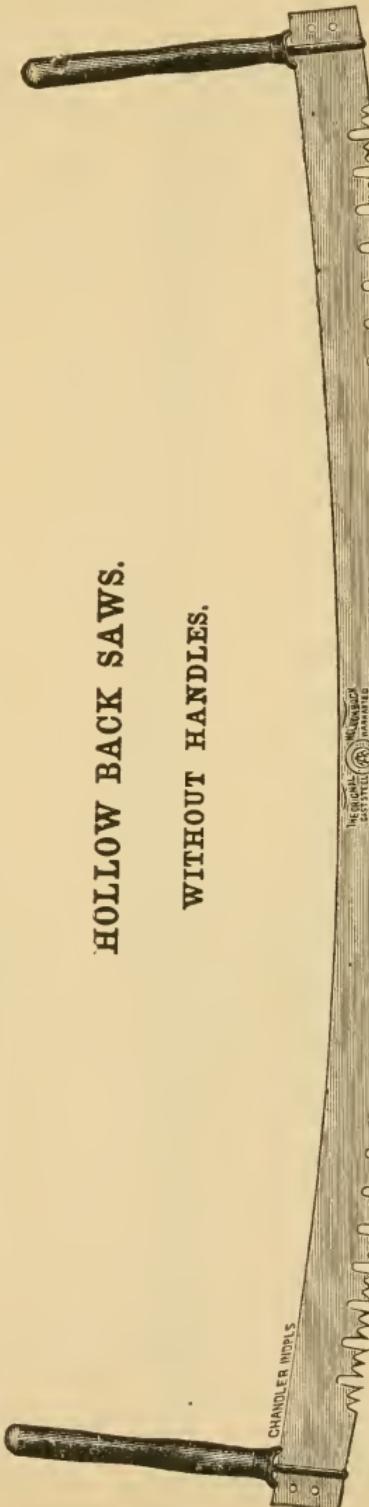


TRADE MARK  
E. C. ATKINS & CO  
INDIANAPOLIS, IND

Diamond Tooth, either style handle .....	\$2 32	3 ft.	$3\frac{1}{2}$ ft.	4 ft.	$4\frac{1}{2}$ ft.	5 ft.	$5\frac{1}{2}$ ft.	6 ft.
		\$2 32	\$2 52	\$2 94	\$3 36	\$3 78	\$4 20	\$4 60

## HOLLOW BACK SAWs.

WITHOUT HANDLES.



American Tooth, without handles.....	\$1 20	4 ft.	$4\frac{1}{2}$ ft.	5 ft.	$5\frac{1}{2}$ ft.	6 ft.	$6\frac{1}{2}$ ft.	7 ft.	7 $\frac{1}{2}$ ft.	8 ft.
		\$1 36	\$1 50	\$1 66	\$1 80	\$1 96	\$2 10	\$2 24	\$2 38	

## ATKINS' HOLLOW-BACK CROSS-CUTS.

Patented January 22, 1884.

## DIAMOND TOOTH.



Diamond or American Tooth, without handles...  
4 ft.      4½ ft.      5 ft.      5½ ft.      6 ft.      6½ ft.      7 ft.      7½ ft.  
\$1 20      \$1 36      \$1 50      \$1 66      \$1 80      \$1 96      \$2 10      \$2 24  
\$1 38



## TUTTLE TOOTH.

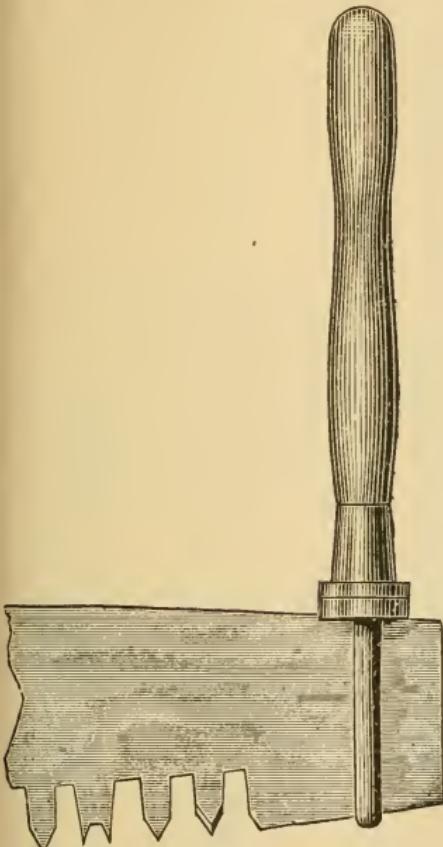
Tuttle Tooth, without handles .....  
4 ft.      4½ ft.      5 ft.      5½ ft.      6 ft.      6½ ft.      7 ft.      7½ ft.  
\$1 12      \$1 26      \$1 40      \$1 54      \$1 68      \$1 82      \$1 96      \$2 10  
\$2 24

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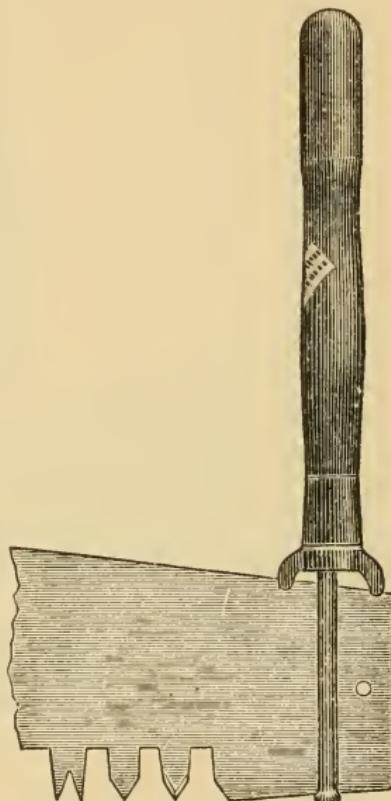
## HANDLES.

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ATKINS' PATENT CROSS-CUT SAW HANDLES.



ATKINS' No. 1 LOOP.

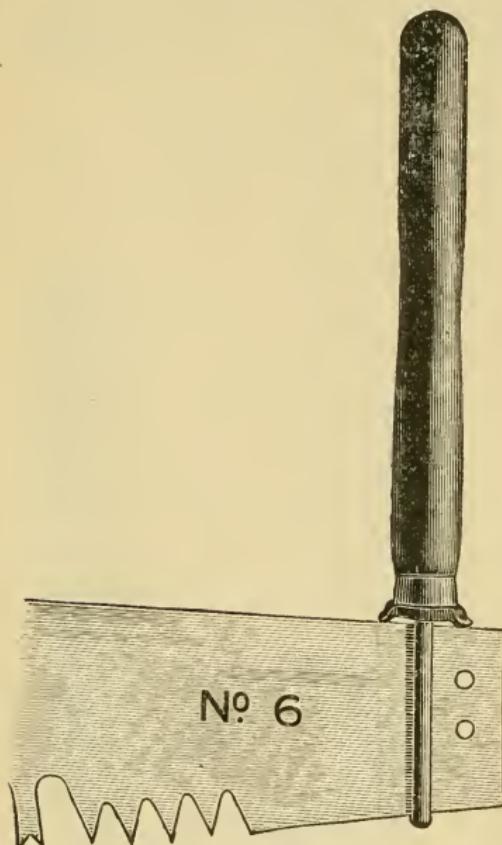


ATKINS' No. 3 LOOP.

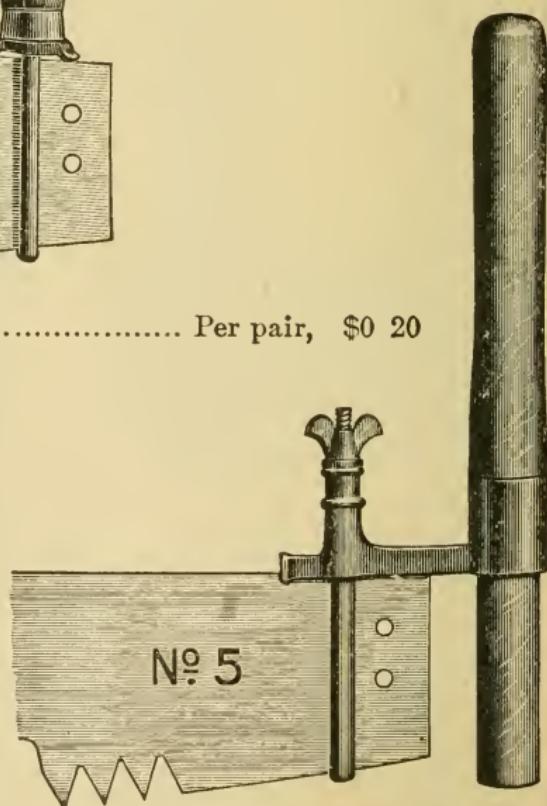
No. 1 Loop, per pair.....	\$0 48
No. 3 Loop, per pair.....	30

The best Loop handles made.

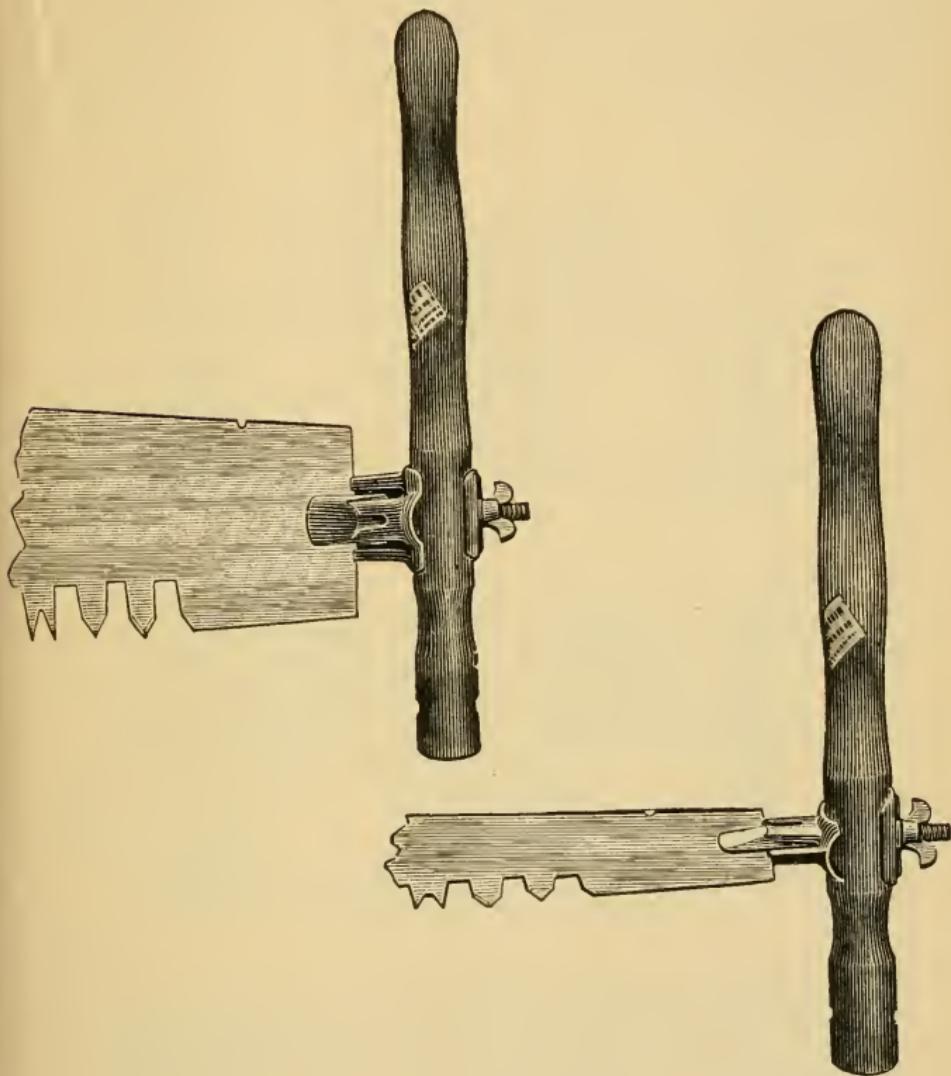
## ATKINS' CROSS-CUT SAW HANDLES.



No. 6 Loop Handle ..... Per pair, \$0 20



No. 5 Loop Handle..... Per pair, \$0 40

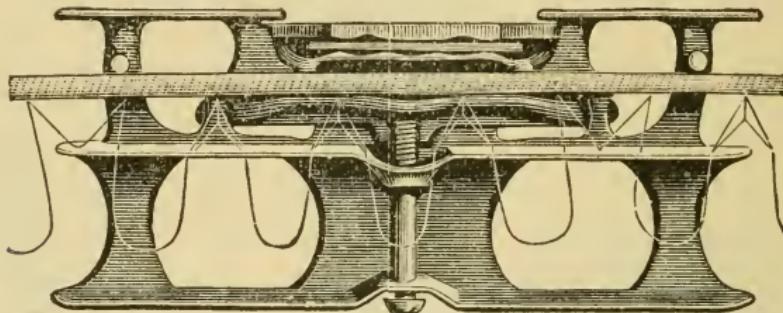
**ATKINS' PATENT CROSS-CUT SAW HANDLES.****REVERSIBLE HANDLE No. 4.**

Price, per pair ..... \$0 30

**ATKINS' PATENT EXCELSIOR SAW TOOLS.****FOR USE IN FITTING UP CROSS-CUT SAWS.**

Comprising a combined Jointer and Raker Tooth Gauge, Side File, Setting Block and Set Gauge. Put up in a neat box containing full instructions for use.

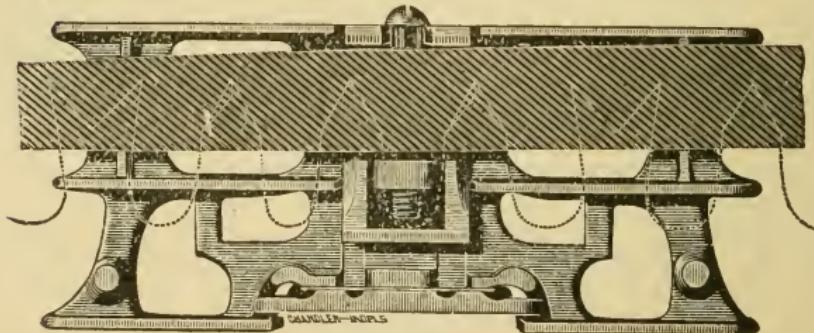
Price, 75c per set. Postage, if sent by mail, 25c extra.



JOINTER.

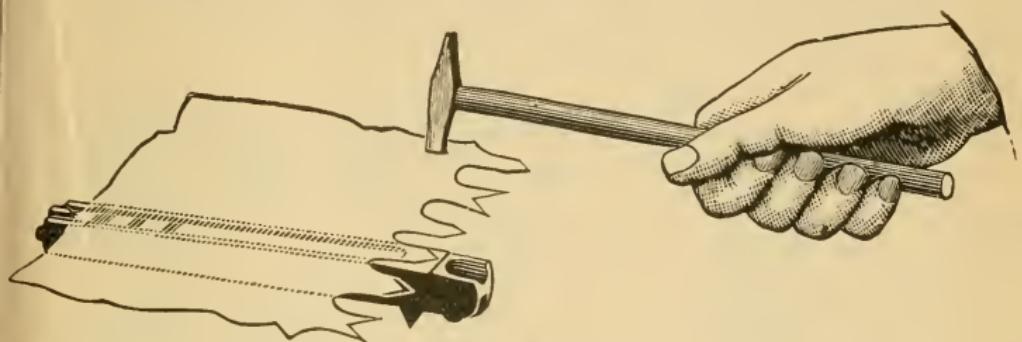


RAKER TOOTH-GAUGE.



SIDE-FILE.

## ATKINS' PATENT EXCELSIOR SAW TOOLS.

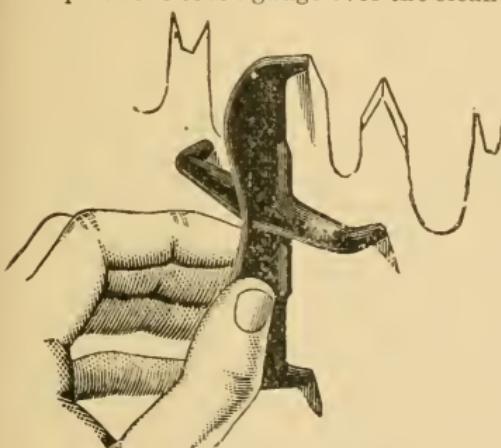


### SETTING BLOCK.

#### DIRECTIONS FOR USE.

In fitting a saw, the teeth should first be jointed, or made uniform in length. To accomplish this, place a nine-inch file in the Jointer, as shown in the cut, and by means of the large screw, spring it to suit the curve of the saw, and pass it lightly over the points of the teeth until it touches the shortest tooth; then place the tooth gauge over the cleaner drag teeth, as indicated in cut, and

file them down to the gauge. Now, if the saw requires setting, lay the setting block on a log with a place leveled to receive it, or end of a block of wood, and lay the saw upon the setting block so that the point of the tooth to be set projects over the apex of the beveled surface fully one-quarter of an inch, bringing the point of tooth to the line scored on the face of the block. (See cut.)



### TOOTH SET-GAUGE.

point on short end indicates the least set, and the point on long end indicates a little more set.

The side file should be used to remove any feather-edge or bur left in filing, and even the set perfectly. This can be done when the saw is in the vise or filing clamp. Place an eight-inch mill bastard file in the recess on the side file; tighten the screws holding the file. Be particular that the saw is placed firmly in the holder. Pass the center of the file lightly against the teeth until the bur is removed and the set evened up. Care should be exercised not to use the side file more than is necessary to remove the feather-edge and even up the set.

The wrench may be used to lessen the set if necessary, but should never be used to set the teeth.

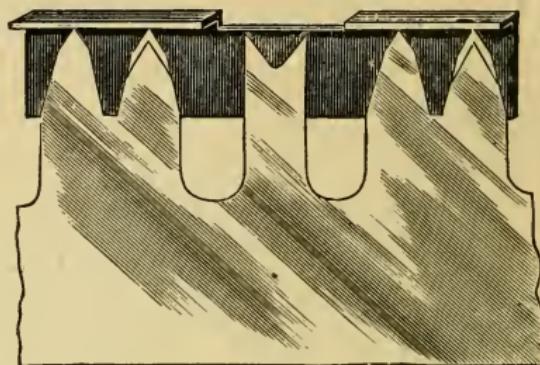
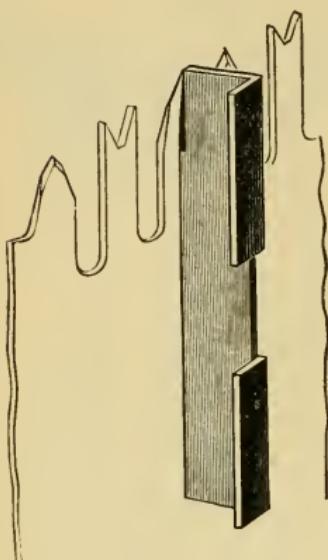
This should be done only with a hammer upon the setting block, or any hard and slightly beveled surface.

Notice carefully the manner in which the saw is filed when new, and file as nearly as possible in the same manner.

To secure the best results, our Diamond Tooth (both Silver Steel and Cast Steel) and Dexter Saws should be sharpened after being set.

## TOOTH GAUGE.

**For Regulating the Length of Clearers and the Width of the Set  
in Cross-Cut Saws.**

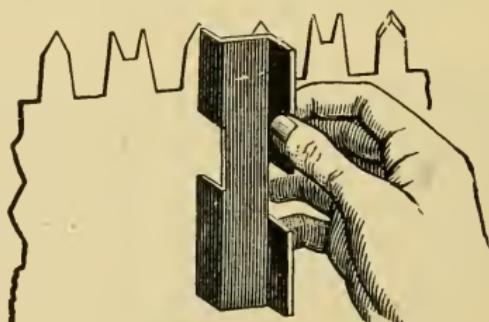


USERS OF CROSS-CUT SAWS WILL FIND THIS TOOL  
INDISPENSABLE.

	Each.	Per dozen.
Price, Single Gauge .....	\$0 10	\$0 80

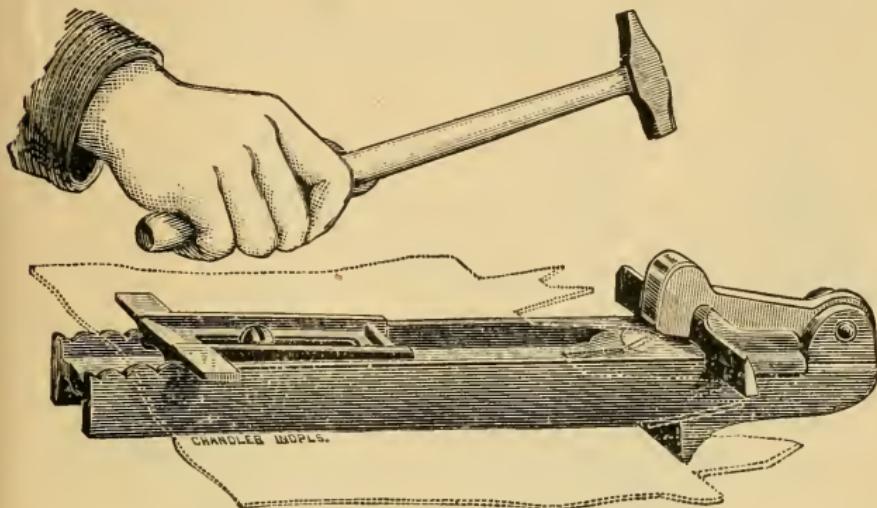
The cleaning teeth of all saws should be somewhat shorter than the cutting teeth, and, although shortened, should be of uniform length throughout. The flange of the Gauge rests on the points of the cutting teeth, the cleaning teeth projecting through the opening in the center of Gauge. Reduce the projecting points by means of a file until arrested by the edge of the Gauge, which can not be cut with a file. Thus tooth after tooth can be rapidly and correctly reduced to an even length by any unskilled operator.

Our Single Gauge regulates the cleaners for hard wood, and our Double Gauge for both hard and soft wood. One end of the straight-edge of these Gauges has been slightly beveled, so that they may be used for gauging the set, as shown in cut.



GAUGING THE SET.

Price, Double Gauge .....	Each, \$0 15.	Per dozen, \$1 20.
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**CROSS-CUT SAW TOOLS.****THE ATKINS PATENT CRITERION SAW-SET.****No. 1. FOR CROSS-CUT SAWS.**

The above cut shows our improved ADJUSTABLE CRITERION SAW-SET. In the CRITERION ADJUSTABLE SET we have combined the principle of the ANVIL AND HAMMER. The hammer or striking part is FINE TOOL STEEL, DROP FORGED. The anvil is TEMPERED STEEL.

By the use of the Criterion set, with a light hammer, giving a light blow, an inexperienced person can set each tooth in a saw to an EXACT GAUGE, imparting an absolutely uniform set to each tooth, and preventing more set than is desired.

Price, each.....	\$0 75
Price, each, by mail .....	1 00

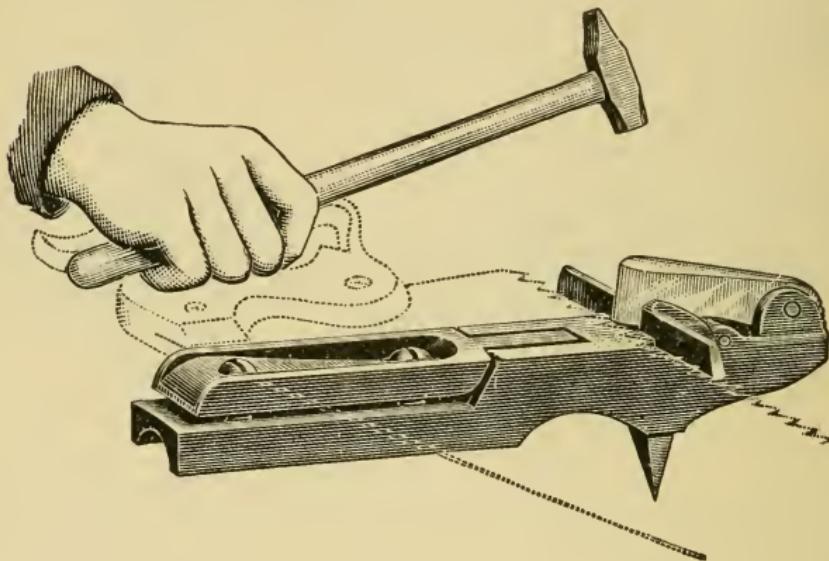
**DIRECTIONS FOR USING.**

It is essential that an improperly set saw should have the set taken out before giving it a proper set; this can be done by loosening the screw at the end of the block and slipping the slide forward as far as it will go; that raises the back of the saw, and with a light blow of the hammer on the hammer-set the set can easily and rapidly be taken out. To set the teeth, put the slide back as far as it will go and tighten the screw; with a light hammer and a light blow a full set is easily given to the saw. If less set is required, put the slide forward to the first or second notch, as may be desired. *Be particular, in using the Set, to press the blade firmly down on the bed of the Set with the hand.*

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**THE ATKINS PATENT CRITERION SAW-SET.**

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**No. 2. FOR HAND, WOOD AND SMALL SAWS.****DIRECTIONS FOR USE.**

To vary the set, loosen the forward screw, then turn the screw at end of the block until the end of the bar is raised, then tighten the forward screw.

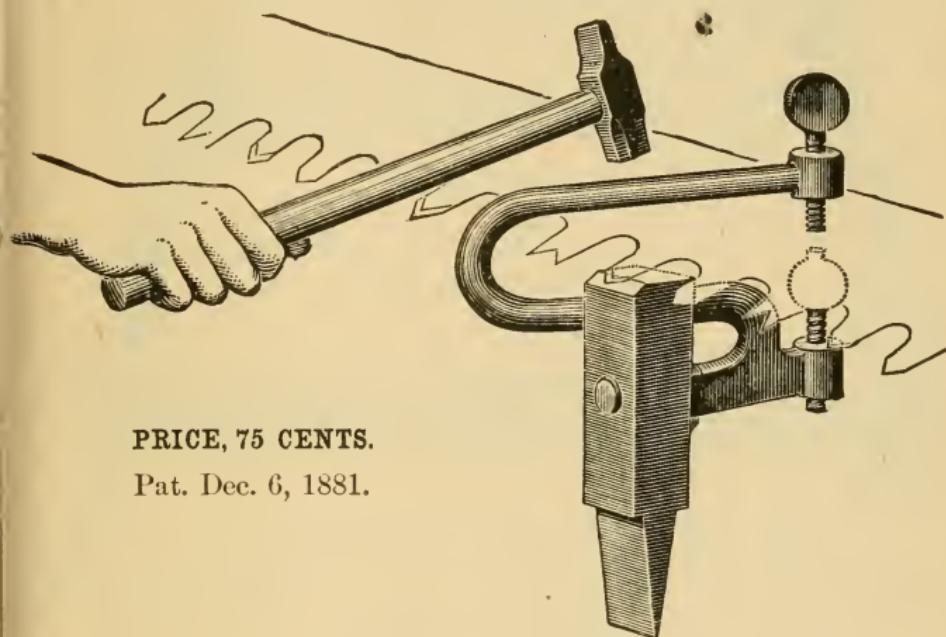
**TO SET FINE-TOOTH SAWS.**—Pay no attention to guide at base of anvil for length of tooth, but place the tooth under the point of the hammer, the point of the hammer nearly reaching the base of the tooth. The hammer being close down on the tooth, makes a perfect guide for setting the teeth.

**CAUTION.**—Use a light hammer and strike a light blow. A heavy hammer and a heavy blow will not impart more set than a light hammer and a light blow.

Price, each.....	\$0 75
Price, each, by mail.....	1 00

## ATKINS' ADJUSTABLE SAW-SET.

A Strong, Durable and Efficient Common-Sense Set, for Every-Day Use,  
by Users of Cross-Cut Saws.



PRICE, 75 CENTS.

Pat. Dec. 6, 1881.

In ordering please refer to it as "Atkins' Adjustable Set."

### ADVANTAGES.

Adjustment to obtain quantity and uniformity of set required for hard and soft, dry and green timber.

A substantial, unyielding support while setting.

Safety from breakage in setting and compression of the fibre of the steel, securing a more permanent set.

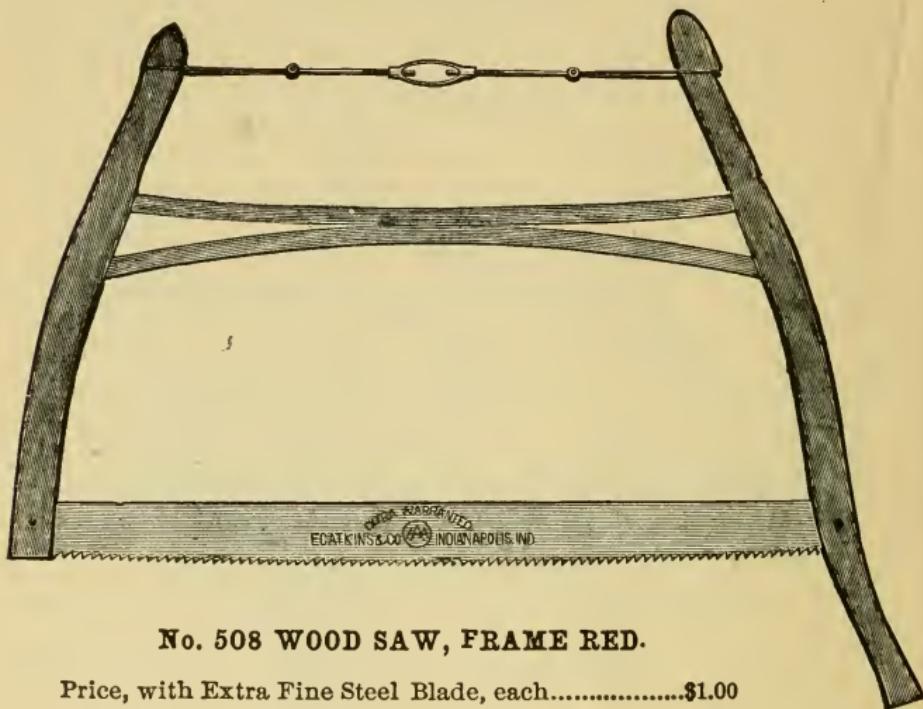
The set can be easily removed by adjustment of the set screws and use of the hammer as in setting.

The point of the tooth being in sight, the effect of the set can be seen by the operator.

For use in setting small circular or cross-cut saws, in the hands of any person reasonably skilled in the use of tools, ATKINS' ADJUSTABLE SET has no superior.

Directions for use accompany each set.

In ordering, mention ATKINS' ADJUSTABLE SET.

**ATKINS' WOOD SAWS.****No. 508 WOOD SAW, FRAME RED.**

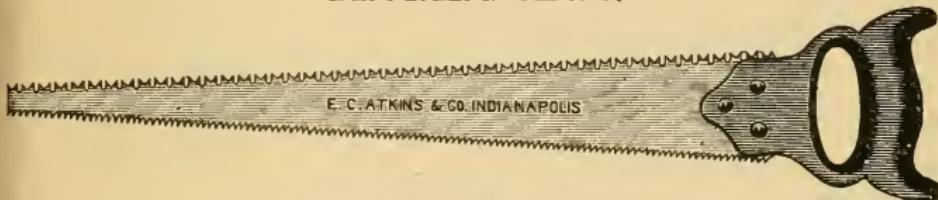
Price, with Extra Fine Steel Blade, each.....\$1.00

**BACK SAWS.****E. C. ATKINS & CO.'S SILVER STEEL.****No. 2 Silver Steel, Apple Handle, Blued Black.**

Inches .....	8	10	12	14	16	18
Per dozen.....	\$15 00	\$16 00	\$18 00	\$20 00	\$22 50	\$25 00

**SILVER STEEL HAND SAWS.****THE BEST SAW MADE.****No. 51. HAND SAW.**

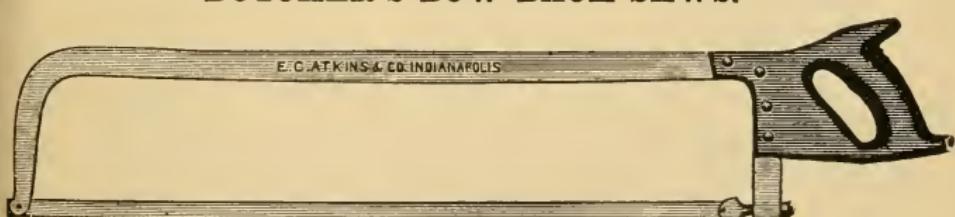
Inches.....	28	26	24	22	20	18
Per dozen .....	\$28 25	\$25 00	\$24 00	\$22 00	\$20 00	\$18 00

**PRUNING SAWS.****No. 2. DUPLEX PRUNING SAWS.**

Inches.....	12	14	16	18	20	22
Per dozen .....	\$7 00	\$7 50	\$8 00	\$8 90	\$9 80	\$11 00

**COMPASS SAWS.****No. 2. APPLE HANDLE.**

Inches.....	10	12	14	16	18
Per dozen .....	\$5 00	\$5 25	\$5 50	\$5 75	\$6 00

**BUTCHER'S BOW BACK SAWS.****No. 7. FLAT STEEL BACK.**

Inches .....	16	18	20	22	24	26	28
Per dozen...\$17 00	\$18 15	\$19 30	\$20 45	\$21 60	\$22 75	\$23 90	

## FELLOE WEBS.

Inches	Gauge	Width	Per Dozen	Inches	Gauge	Width	Per Dozen
6	19	$\frac{3}{16}$ to $\frac{1}{2}$	\$1 50	22	17	$\frac{1}{4}$ to $\frac{3}{4}$	\$3 85
7	19	$\frac{3}{16}$ to $\frac{1}{2}$	1 60	24	17	$\frac{1}{4}$ to $\frac{7}{8}$	4 25
8	19	$\frac{3}{16}$ to $\frac{1}{2}$	1 70	26	17	$\frac{1}{4}$ to $\frac{7}{8}$	4 65
10	18	$\frac{3}{16}$ to $\frac{1}{2}$	1 90	28	17	$\frac{1}{4}$ to 1	5 15
12	18	$\frac{1}{4}$ to $\frac{1}{2}$	2 10	30	16	$\frac{1}{4}$ to 1	5 65
14	17	$\frac{1}{4}$ to $\frac{1}{2}$	2 40	32	16	$\frac{1}{4}$ to 1	6 15
16	17	$\frac{1}{4}$ to $\frac{5}{8}$	2 75	34	16	$\frac{1}{4}$ to 1	6 65
18	17	$\frac{1}{4}$ to $\frac{5}{8}$	3 10	36	16	$\frac{1}{4}$ to 1	7 15
20	17	$\frac{1}{4}$ to $\frac{5}{8}$	3 45				

One gauge heavier than above list, no extra charge; 5 per cent. extra for each additional gauge to 14 gauge. Above 14 gauge, special prices.

Extra width, 10 per cent. for each  $\frac{1}{8}$  inch.

N. B.—All Web Saws,  $\frac{1}{8}$  inch and narrower, will be made with wide ends, in order to give strength at the hole, 25 per cent. advance. With Pins, 50 cents per dozen additional.

## FAY'S PATENT SCROLL SAWS.

Inches.	Per Dozen.	Inches	Per Dozen.
8.....	\$2 40	14.....	\$4 25
9.....	2 70	16.....	4 85
10.....	3 00	18.....	5 45
11.....	3 30	20.....	6 05
12 .....	3 60	22.....	6 70
13 .....	3 90	24.....	7 40

Webs to 16 inches, over  $\frac{3}{4}$  inch wide, extra price; 18 to 24 inches, over 1 inch wide, extra price.

We make the above webs from 13 to 16 gauge in thickness.

With Pins, 50 cents per dozen additional.

**CABINET SCRAPERS.**  
**MADE FROM SILVER STEEL.**

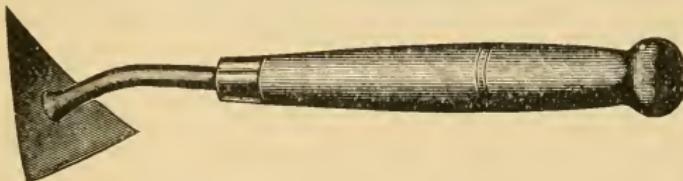


Six inches in Length.

Width.	Per Dozen.
2 inches	\$0 60
2½ " "	70
3 " "	80
3½ " "	90
4 " "	1 00
4½ " "	1 10
5 " "	1 20

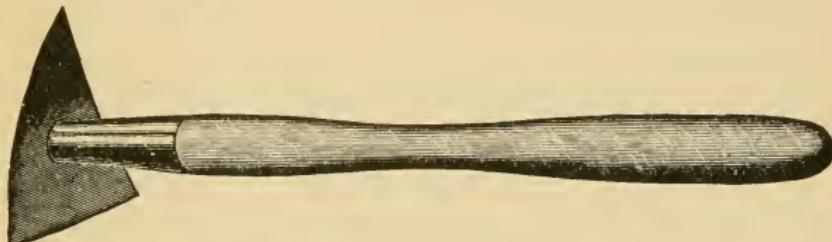
Put up One Dozen in a Box.

**BENCH SCRAPERS.**



**No. 1 BENCH SCRAPER.**

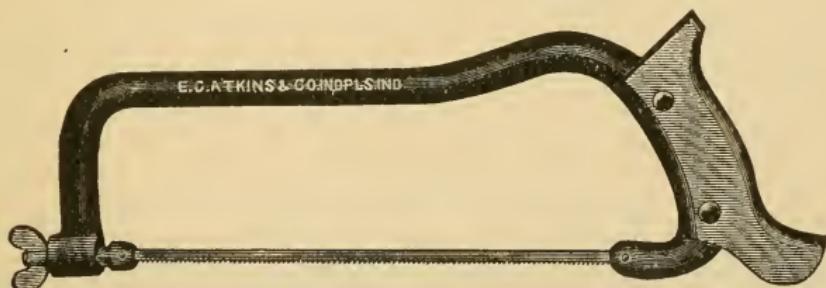
Per Dozen ..... \$5 00



**No. 2 BENCH SCRAPER**

Per Dozen ..... \$5 50

**DEHORNING SAW.**

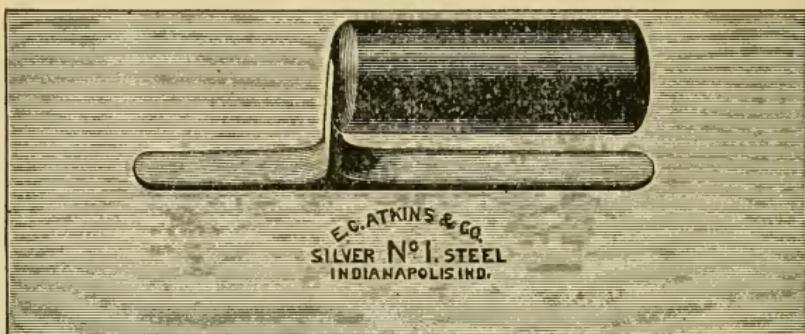


**E. C. ATKINS & CO.**

Japanned, Malleable Iron Frame, Beech Handle, Complete.  
 Blades, 9½ inches long, ¼ inch wide.

Price complete, per doz.....\$12 00 | Price, Blades only, per doz., \$1 50

## PLASTERING TROWELS.



## No. 1. SILVER STEEL FINISHING TROWEL.

Inches .....	10	10½	11	11½	12
Per dozen.....	\$17 00	\$17 75	\$18 50	\$20 50	\$22 50



## No. 2. CAST STEEL FINISHING TROWEL.

Inches .....	10	10½	11	11½	12
Per dozen.....	\$13 50	\$14 50	\$15 50	\$16 75	\$18 00

## SAW KNIFE.



Price, per dozen .....	\$6 00
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PUT UP ONE DOZEN IN A BOX.

## SAW MAKERS' TOOLS

—AND—

## SAW MILL SPECIALTIES.

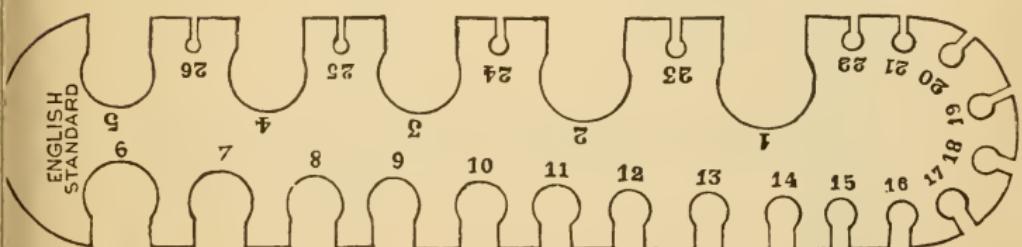
To accomplish the best results, a workman must have suitable tools, and mills should be equipped with the latest improved appliances.

Our practical experience and knowledge of the requirements of saw makers and wants of the mill enable us to furnish a line of Tools and Mill Specialties adapted to meet their wants.

We invite your attention to the following list of

### TOOLS AND MILL SPECIALTIES.

### STANDARD WIRE GAUGES.



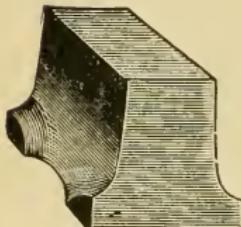
Wire Gauges, No. 1 to 26, each .....	\$1 25
Round Wire Gauges.....	1 00

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## SAW MAKERS' TOOLS.

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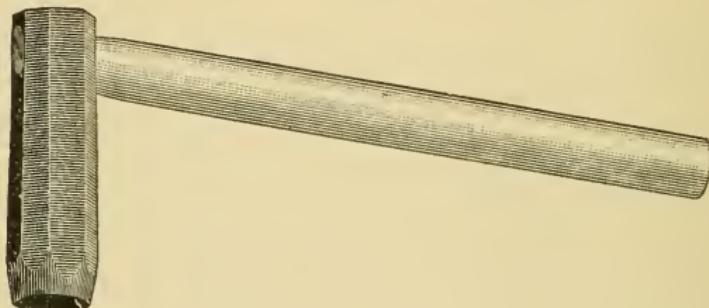
### ANVILS, STEEL FACED.



50 to 250 pounds.....Price, 12c. per pound.

We keep in stock Anvils 10 x 6 face, 86, 110, 145 pounds; 12 x 6, 250 pounds.

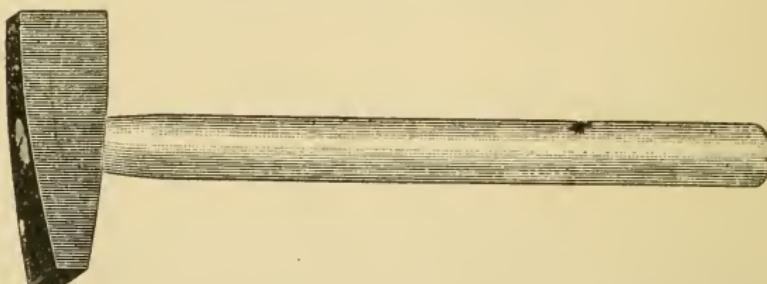
### ROUND FACE HAMMER.



Price..... 50c. per pound.

Furnished any weight desired, 50c. per pound.

### SQUARE FACE HAMMER.



Price..... 50c. per pound.

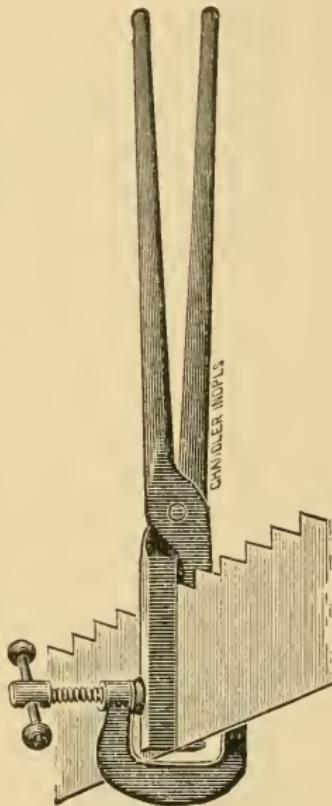
Furnished any weight desired, 50c. per pound.

**Straight-Edge.**

Inches.....	4	6	8	10	12	18	24	30	36	40	44	48	52	54	56	60	66	72
Price, each.....	\$0 40	\$0 45	\$0 50	\$0 55	\$0 65	\$0 95	\$1 36	\$1 65	\$1 95	\$2 10	\$2 30	\$3 00	\$3 50	\$3 70	\$4 00	\$4 60	\$5 50	

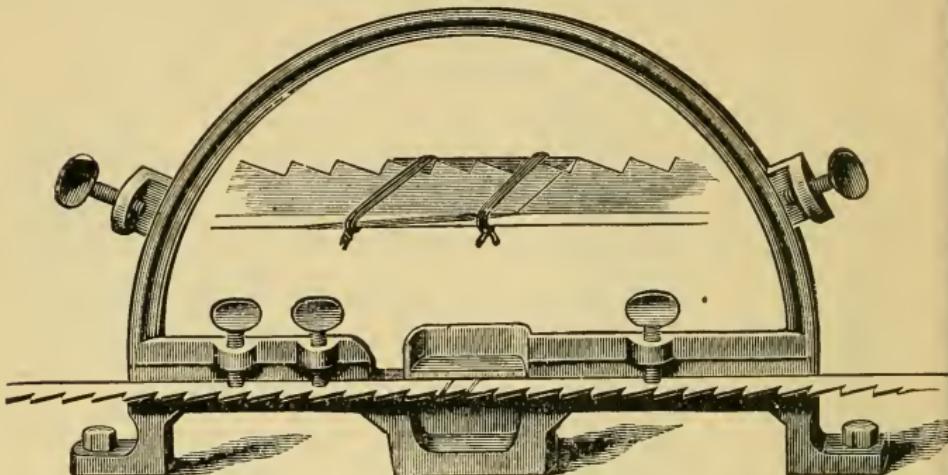
**LEVELING TABLE.**

12 inches wide, 7 feet long ..... Price, \$12 00

**BRAZING TONGS AND CLAMPS.**

Price, to braze from 2 to 6 inches, with clamp ..... \$5 00 net.  
For bands 1½ inches and under, no clamp ..... 2 00

**BRAZING AND FILING CLAMPS.  
FOR BRAZING NARROW BAND SAWS.**

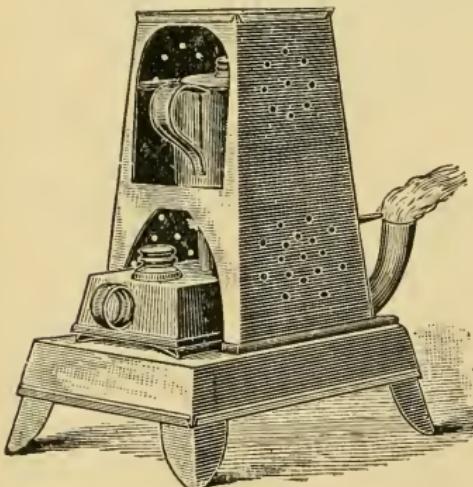


Price, each ..... \$2 50

**DIRECTIONS FOR BRAZING.**

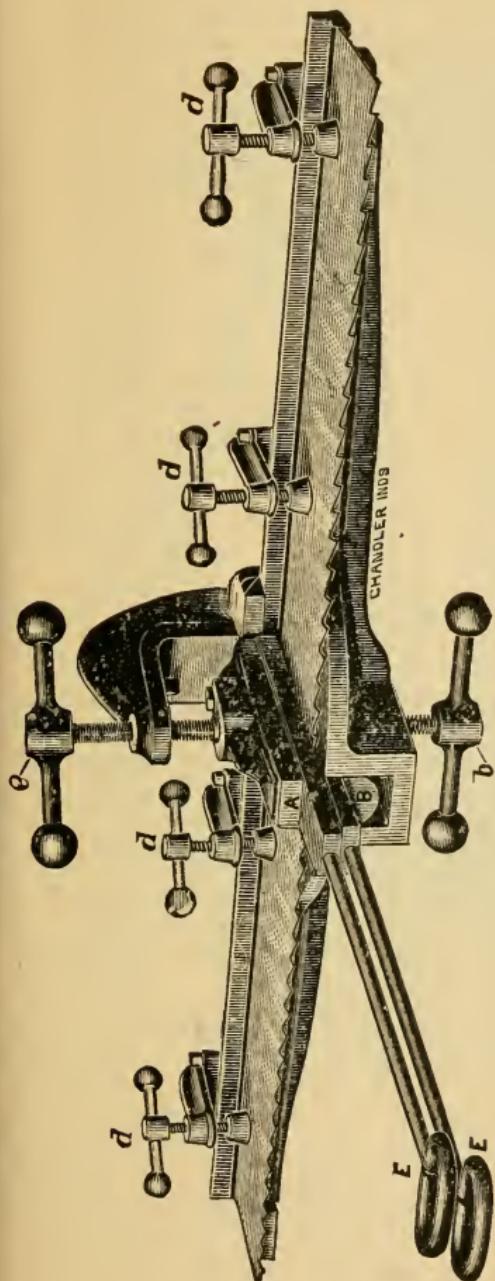
Bevel the ends of saw about one-half inch, and bind firmly together with two or three strands of very fine wire. Fasten the saw in position with the set screws in clamp; place a small piece of silver solder on the lap, and cover with powdered borax. The braze can then be made either with our alcohol lamp with automatic blower, or with the common brazing tongs. When the lamp is used, a piece of charcoal placed in the recess in the clamp, above and below the saw, assists in holding the heat, and insures a perfect weld. Use the half circle of clamp when filing the bevel and in finishing up the braze.

**DIRECTIONS FOR USING LAMP.**



Use alcohol in the lamps, having the upper one, or blower, about half full. Light both wicks in the lower lamps and place the heating lamp in position under the blower. See that the blow-pipe is directed against the base of the blaze, and in a moment, as the alcohol becomes heated, the flame can be sent in any direction, and the weld quickly made. As the solder melts, spread it evenly over the surface of the saw with the point of a file.

Price, each ..... \$3 50



#### DIRECTIONS FOR BRAZING.

Before commencing the operation of brazing, lay that portion of the saw to be brazed on the table between the clamps, noting that the clamp screw *e* is midway between back and front of saw. To insure uniform pressure its entire width, the table is adjusted to any width saw by means of the four steel keys which are placed in the parallel slots cut in the face of the table, at equal distance from back rib, and which form a true bearing for the back of saw. In preparing the braze, the upper clamp *A* can be swung to the left, parallel with saw, thus making that portion of blade more accessible and readily seen. Place the brazing irons *EE* in position, one over and one under the saw; adjust the upper clamp so that, in the operation of brazing, one or two turns of the upper screw *e* will clamp the saw firmly. Bevel the ends of the saw on opposite sides to a width of  $\frac{3}{4}$  inch, and clean the surface with muriatic acid; clean a strip of silver solder  $\frac{3}{4}$  inch wide with the acid, lay the saw upon the brazing table with the beveled ends lapped  $\frac{3}{4}$  inch, and place the strip of clean silver solder between the beveled ends. Tighten the clamps *ddd* to hold the saw uniformly in position, with the back parallel with the back rib of the table. The brazing irons *EE* are to be heated to a cherry-red in a moderate clear fire on the forge. If coal containing sulphur is used, the sulphur should first be burned off before putting the charcoal on the fire; the irons being at a uniform cherry-red heat, place one under, between the saw and lower clamp, and the other one between the saw and upper clamp; then tighten the upper clamp by turning screw *e*, and leave the saw in this position until cold. The brazing irons *EE* should be kept of even thickness by filing, repeated heating being liable to scale them unevenly.

Price, ..... \$25 00.

**THE EUREKA SCARFER,**  
**OR LAPING MACHINE FOR BAND SAWS.**



The cutter leaves a perfect, clean, smooth surface, and makes a joint as perfect as a weld, and what is of greatest importance, it makes every cut exactly alike. A beginner can make a better joint than the most experienced man can by hand.

The machine will pay its cost in three months in the saving of labor, files, and the results of bad brazing. The machine is nicely mounted on four legs; is run by a three-inch belt on a ten-inch pulley, which should run sixty revolutions per minute. In case of necessity the pulley can be taken off and a hand crank substituted. But care should be taken not to exceed the proper speed.

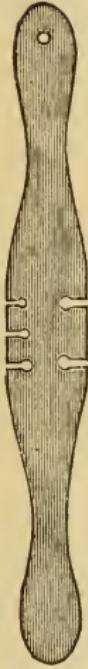
We furnish with each machine an extra cutter and a neat power cutter-grinder.

Price, complete .....	\$80 00
Price Extra Cutters, each..	1 00

## INDIANAPOLIS, IND.

## CIRCULAR AND MILL SAW-SETS.

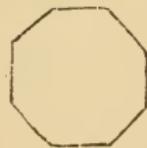
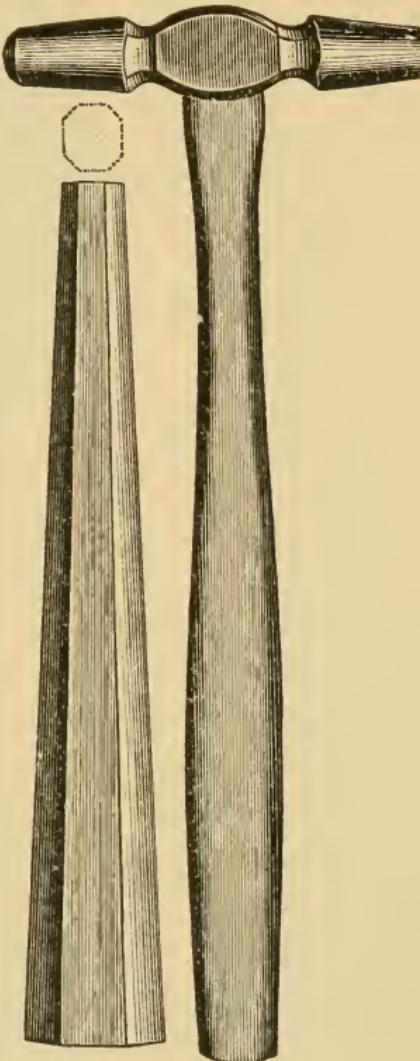
MADE TO SUIT SAWS OF DIFFERENT SIZES.



## PRICES.

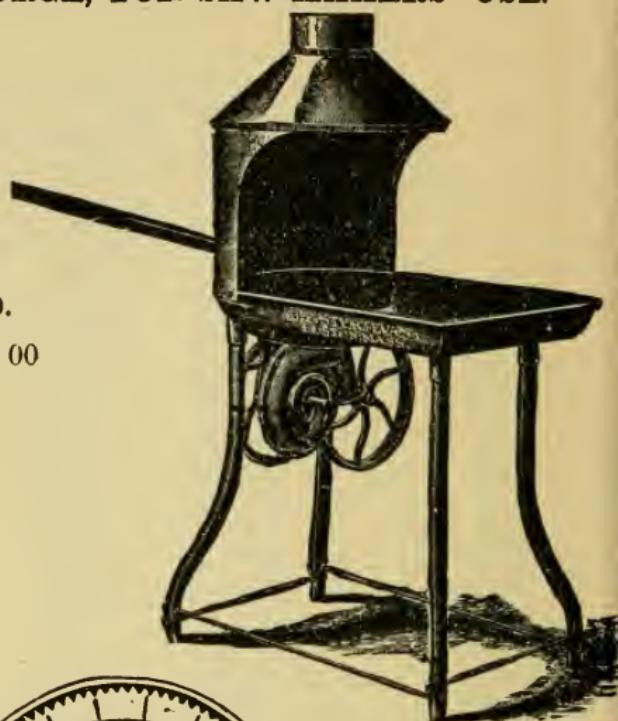
Large, for Circular Saws.....	\$1.50
Small, for Band Saws.....	1.00

## **BARS, SWAGES AND HAMMER.**

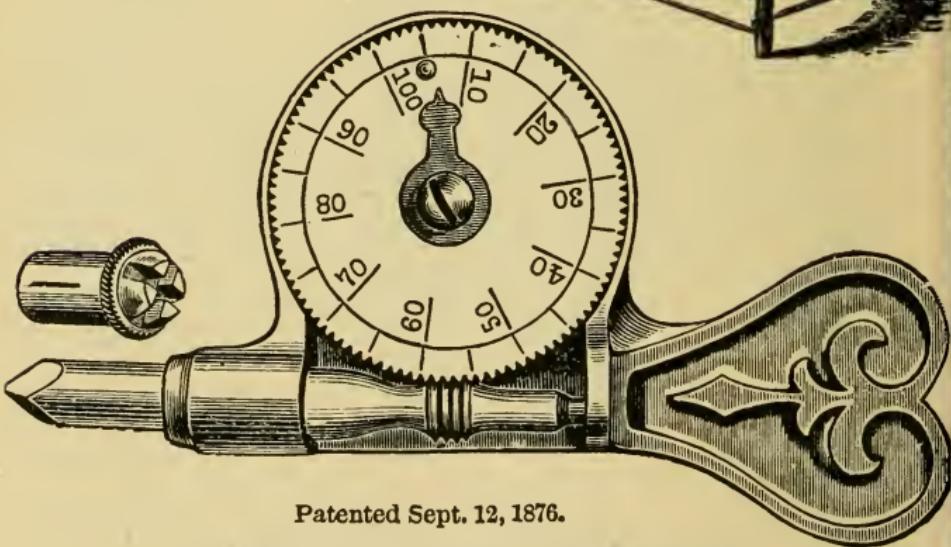


### PRICES.

Hammer.....	Net, each, $\frac{3}{4}$ inch, \$1.25; $\frac{7}{8}$ inch, \$1.50; 1 inch, \$1.75
No. 1, Eight or Six Sided, ".....	Net, each, 25
No. 2, ".....	".....
No. 3, ".....	".....
No. 4, ".....	".....

**PORABLE FORGE, FOR SAW-MAKERS' USE.****FORGE, WITH HOOD.**

Price ..... Net \$20 00



Patented Sept. 12, 1876.

**IMPROVED SPEED INDICATOR.**

Correct and reliable. This instrument is very useful for accurately giving the speed of any machine or shaft when in motion. It is very important that the exact speed of saws be given, and with the Speed Indicator there can be no mistake. Every mechanic should have one.

Sent by mail, prepaid, with cap, for.....\$0 75

For proper speed of circular saws, see page 25



No. 0, for large circular saws ..... \$3 50  
 No. 1, for large circular saws ..... 3 00

No. 2, for small circular and mill saws ..... \$2 50  
 No. 3, for small circular saws ..... 2 00

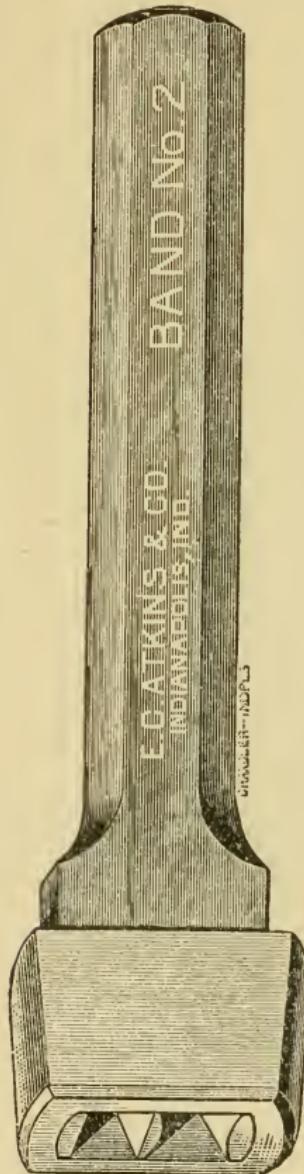
### MIXTER'S DUPLEX SWAGES.



### MIXTER'S PATENT SWAGES.

No. 3 Duplex Swage, largest size, for saws of from 5 to 10 gauge.....	\$7 00
No. 2 Duplex Swage, medium size, for saws of from 8 to 12 gauge.....	6 00
No. 1 Duplex Swage, for all thinner gauges.....	5 00
No. 0 Duplex Swage, for small, thin saws.....	4 00

## BAND SAW SWAGE.

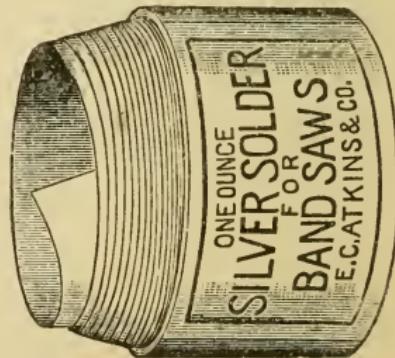
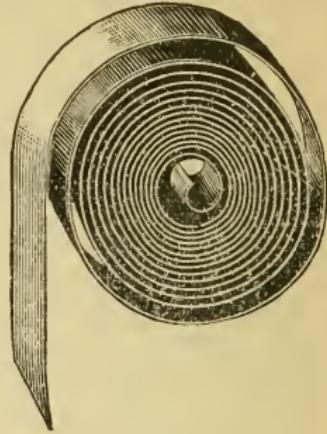


No. 2 Swage, for Band Saws.....\$2.50

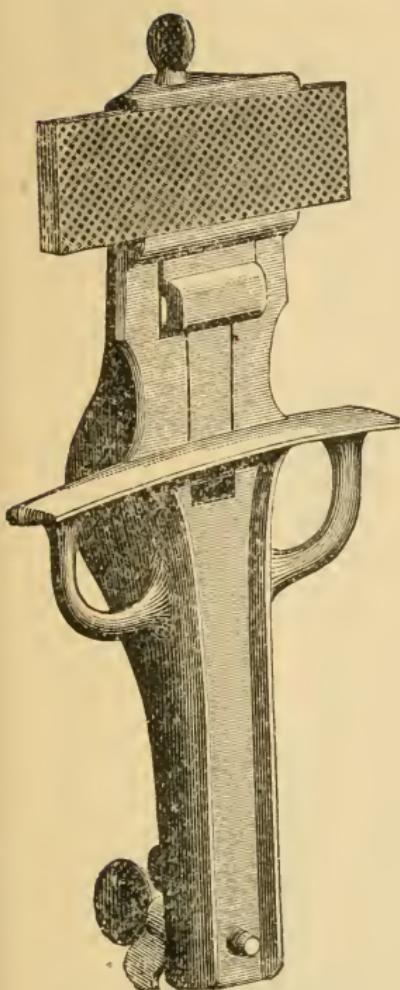
## SILVER SOLDER.

The successful brazing of Band Saws largely depends on the solder used. We use, and keep constantly in stock, special Silver Solder that has proven to be the best adapted for brazing tempered steel.

We will furnish Silver Solder at the lowest market price, predicated on the price of silver.



## ATKINS' PATENT SIDE FILES.



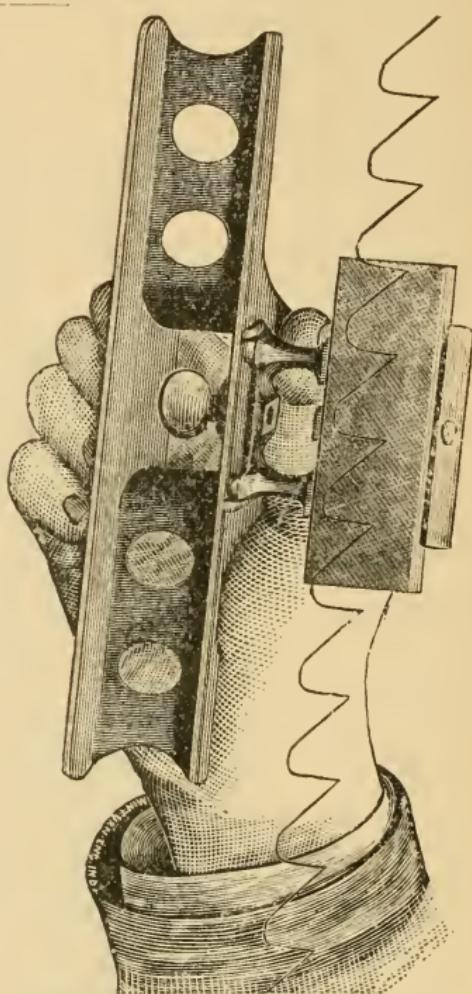
**THE ADJUSTABLE No. 1.**  
(FOR CIRCULAR SAWS.)

The No. 1 File is the simplest tool ever invented for the purpose. The width of the set or swaged tooth is regulated by a *single set-screw*. The clamp for holding the file is *adjustable*, permitting the use of any kind of file, if one of our files made specially for them can not be easily obtained. This tool is especially adapted for circular saws.

Price.....\$1 00

The No. 2 File is adjustable for holding 8-inch to 10-inch files. It is adapted for both circular and long saws. It can be used on blades down to two inches in width, and as wide as desired, and on all sizes of circular saws.

Price .....	\$1 00
Extra Files, each.....	20

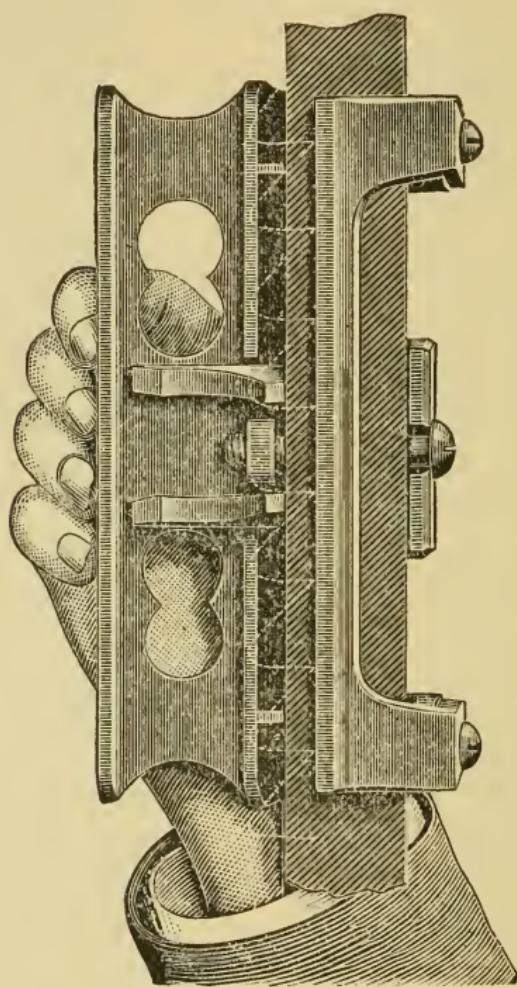


**THE ADJUSTABLE No. 2.**  
(FOR CIRCULAR, BAND AND GANG SAWS.)

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**ATKINS' PATENT SIDE FILES.**

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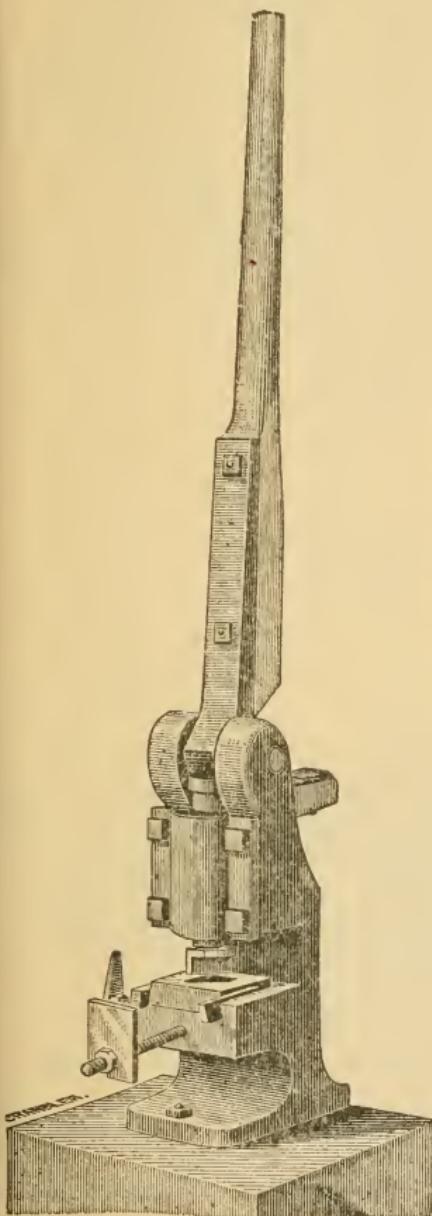
**THE ADJUSTABLE No. 3.**

(FOR BAND AND GANG SAWS.)

The No. 3 File is adjustable for holding 8-inch or 9-inch files, and so arranged that the file can be tilted to any desired angle. A gauge passes over the points of the teeth, bringing the file in proper position for doing the work. The No. 3 file is for all long saws. It can be used on any width of blade.

Price..... \$1 00

**ATKINS' GUMMER FOR  
BAND AND CROSS-  
CUT SAWS.**



Price ..... Net, \$27 00  
 Extra Dies ..... 7 00  
 We furnish dies for Shearing Band  
 Saws to be used in this Gummer.  
 Price ..... \$8 00

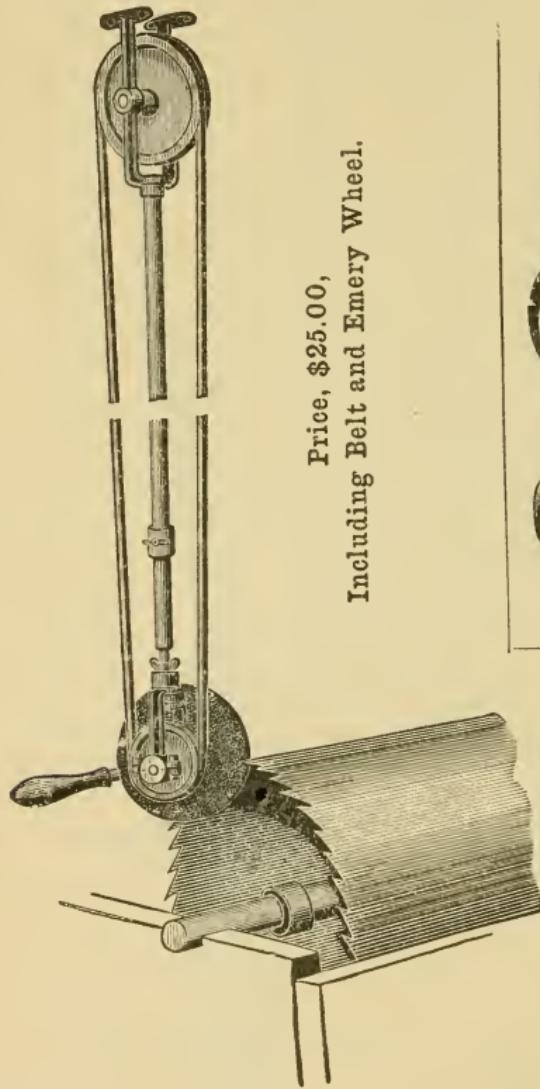
**SISSON'S PATENT SAW  
GUMMER.**

Patented December 20, 1881.



**PRICE-LIST.**

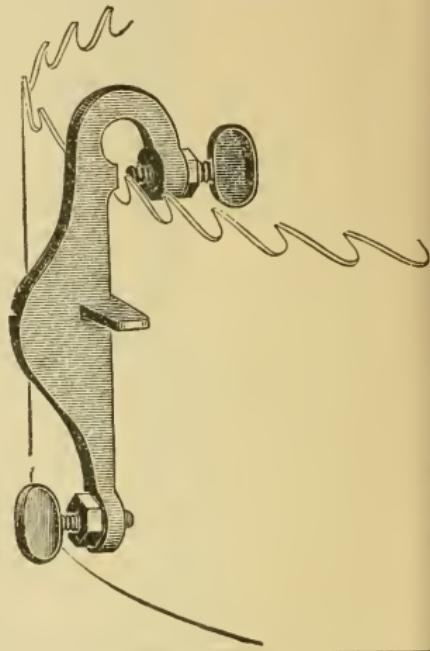
No. 2, for cross-cut saws...20 lbs. \$12 00

**CYLINDER SAW GUMMER.**

Price, \$25.00,  
Including Belt and Emery Wheel.

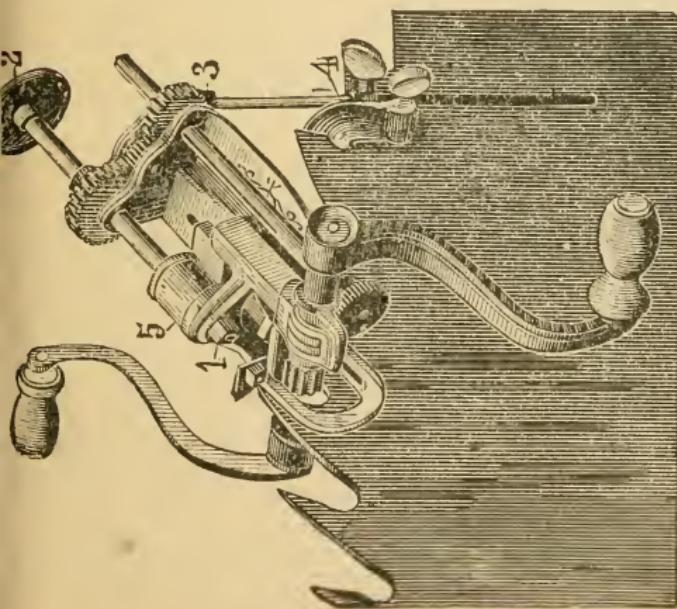
**SET GAUGE FOR CYLINDER SHINGLE AND HEADING SAWS.**

Price.....\$0 75

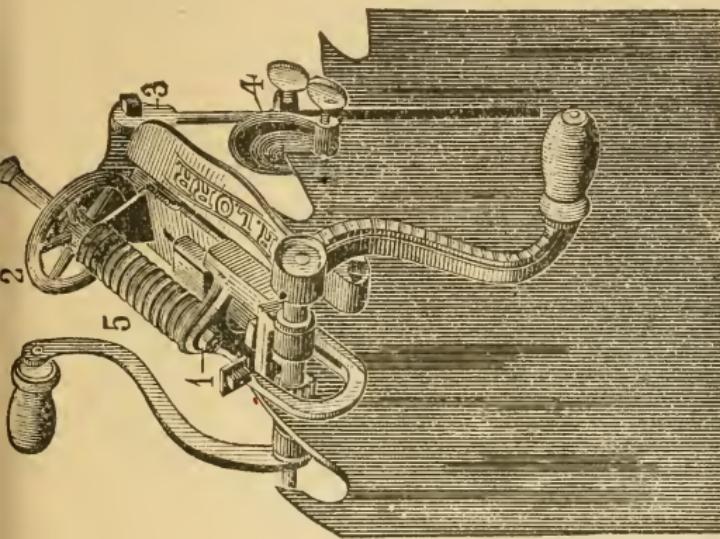


Can be used for gumming  
any kind of a saw.

The above illustration shows the Atkins Cylinder Saw Gummer. This Gummer is adjustable, being so constructed that it can be raised or lowered, and the wheel can be used at any desired angle while the Gummer is in use.



THE STANDARD.

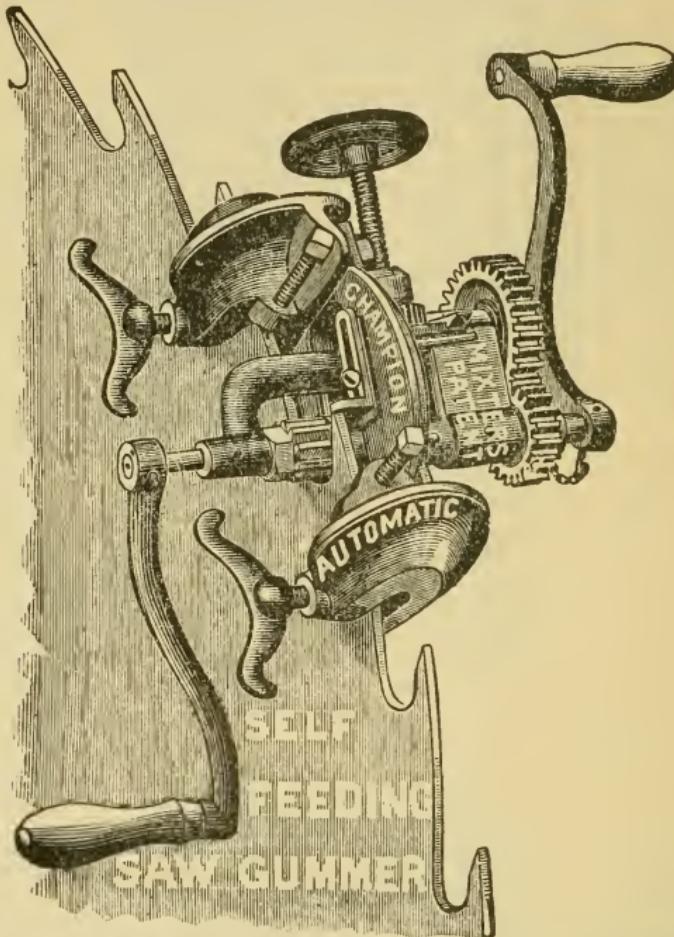


THE I. X. L.

**PRICES.**

The "Standard" Saw Gummer complete, with three arbors, two cranks and wrench, with two Inserted Tooth Cutters, any size on list, and fifty (50) teeth ..... \$20 00  
 The "Standard" Saw Gummer, complete, with three arbors, two cranks and wrench, with four Solid Cutters, any size on list, and one Cutter Grinder ..... 20 00  
 "The I. X. L." Saw Gummer complete, with three arbors, crank and wrench, with three Solid Cutters, any size on list, and one Cutter Grinder ..... 15 00  
 "The I. X. L." Saw Gummer, complete, with three arbors, crank and wrench, with one Inserted Tooth Cutter, any size on list, and fifty (50) teeth ..... 15 00

**MIXTER'S CELEBRATED CHAMPION GUMMER.**  
**WITH PATENT AUTOMATIC SELF-FEED.**



**PRICE-LIST MIXTER'S PATENT CHAMPION GUMMERS.**

The Mixter Patent Automatic Self-Feeding Champion Gummer, including three cutters (usual size, $\frac{3}{4}$ , $\frac{7}{8}$ and 1 inch), grinder and wrench...	\$30 00
Small size Patent Automatic Self-Feeding Champion Gummer, especially adapted for cross-cut saws and small and medium circular saws, including three cutters ( $\frac{3}{8}$ , $\frac{1}{2}$ and $\frac{5}{8}$ inch), grinder and wrench.....	25 00
Extra arbors for $\frac{3}{8}$ , $\frac{1}{2}$ and $\frac{5}{8}$ inch cutter for Mixter's Champion Gummers	2 00
Extra arbor for $\frac{3}{8}$ inch cutter for Mixter's small size Champion Gummers	1 50

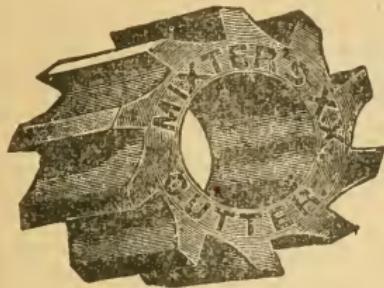
TAKE NOTICE: Full directions sent with each machine.

The engraving represents Mixter's Famous Champion Gummer, with patent adjustable Automatic Self-Feed. It can be regulated at will to feed faster or slower, according to the work to be performed, and can be changed in an instant from self-feeding to hand-feeding.

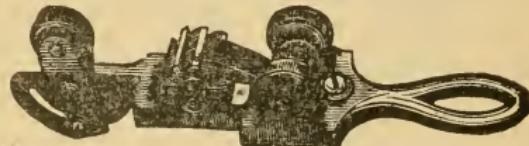
It is self-acting, throwing itself out of gear when the teeth are cut to the required depth, making them of uniform length.

The Champion has the lateral or oscillating movement of the cutter, and is fully adjustable to all kinds of saws, from the largest circular to the smallest in general use; also mill and cross-cut saws. The line of the teeth can be cut at any angle desired from horizontal to perpendicular. It cuts very rapidly, and with no risk of bending, breaking, or case-hardening the saw.

## GUMMER CUTTERS.



### IMPROVED CUTTER GRINDER.



Price ..... \$1.00

Grinds cutters perfectly round and true.  
We give a grinder free with each gummer.

### PRICES OF GUMMER CUTTERS.

#### MIXTER'S XX CUTTERS.

Size.....	$\frac{3}{8}$ in.	$\frac{1}{2}$ in.	$\frac{5}{8}$ in.	$\frac{3}{4}$ in.	$\frac{7}{8}$ in.	1 in.	$1\frac{1}{8}$ in.	$1\frac{1}{4}$ in.	$1\frac{1}{2}$ in.	$1\frac{3}{8}$ in.	
Each.....	\$0.50	.50	.50	.60	.60	.70	.80	.90	1.00	1.25	1.75

#### XXX CUTTERS.

For Mixter's, Standard, I. X. L., and Diston's Gummers, when ordering say for which make of Gummer.

Size....	$\frac{3}{8}$ in.	$\frac{1}{2}$ in.	$\frac{5}{8}$ in.	$\frac{3}{4}$ in.	$\frac{7}{8}$ in.	1 in.	$1\frac{1}{8}$ in.	$1\frac{1}{4}$ in.	$1\frac{3}{8}$ in.	$1\frac{1}{2}$ in.
Each..	\$0.40	.40	.50	.60	.65	.65	.80	.90	1.05	1.20

#### STONE'S GUMMER CUTTERS.

Size.....	$\frac{3}{8}$ in.	$\frac{1}{2}$ in.	$\frac{5}{8}$ in.	$\frac{3}{4}$ in.	$\frac{7}{8}$ in.	1 in.
Each.....	\$0.50	.50	.75	1.00	1.25	1.50

#### STAR GUMMER CUTTERS.

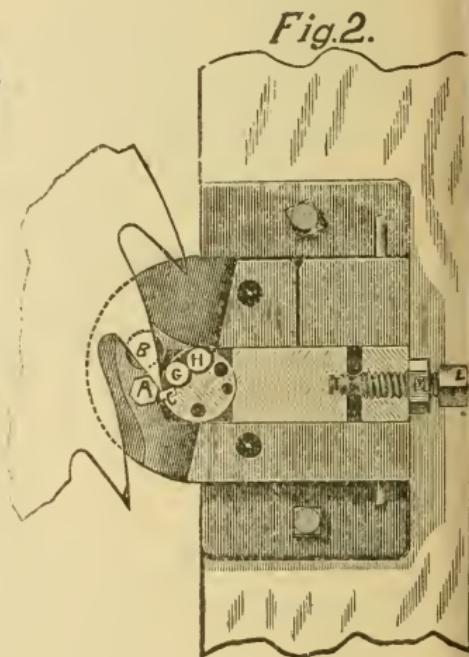
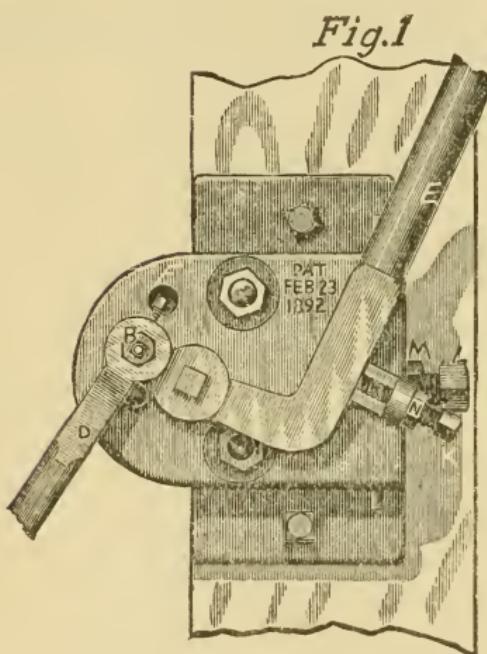
Size.....	$\frac{3}{4}$ in.	$\frac{7}{8}$ in.	1 in.
Each .....	\$0.55	.60	.65

In ordering cutters be sure and give size of hole, as well as size of cutter required; or you can send us an impression of one end of cutter on paper. Be particular to state what gummer they are to be used in.

## THE ROBERTS PATENT ROLLER SWAGE.

Patented February 23, 1892.

FOR CIRCULAR AND GANG SAWS.

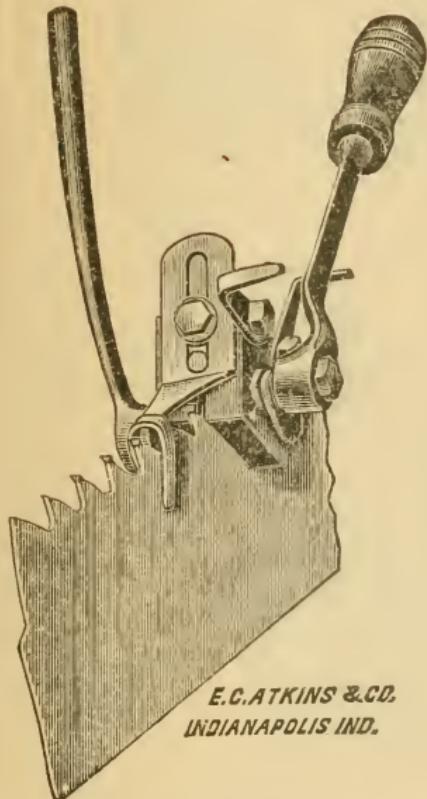


The Roberts Patent Swage produces results that are accomplished by the bar and hammer swage, drawing the teeth without changing the pitch, or injury to the steel, and shortens the teeth less than by any other process of swaging. It makes the point very strong, and less liable to drop the point in hard lumber and pine knots, thus insuring economy in the wear of the saw, and better results in the production of lumber than with saws dressed with the swages in general use.

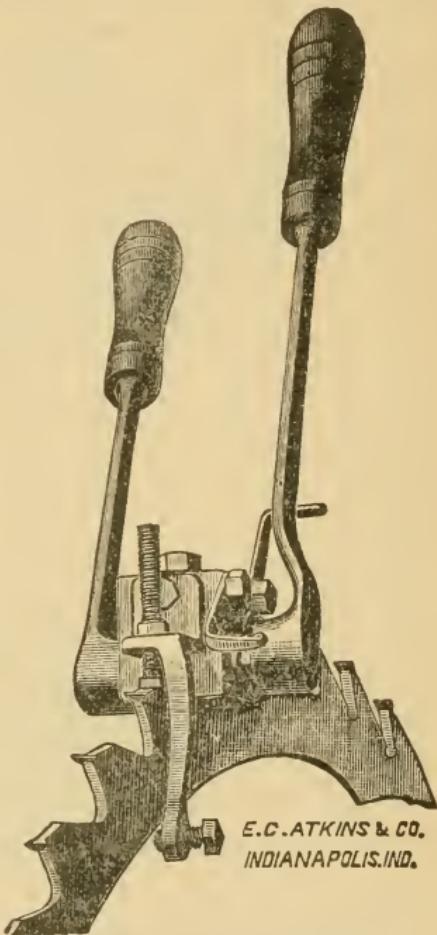
Price..... \$75.00.

## VICTOR SWAGE.

**FOR CIRCULAR, BAND, GANG, MULAY, SHINGLE, LATH  
AND RE-SAWS.**



*E.C. ATKINS & CO.  
INDIANAPOLIS IND.*



*E.C. ATKINS & CO.  
INDIANAPOLIS IND.*

### **FOR LONG SAWS.**

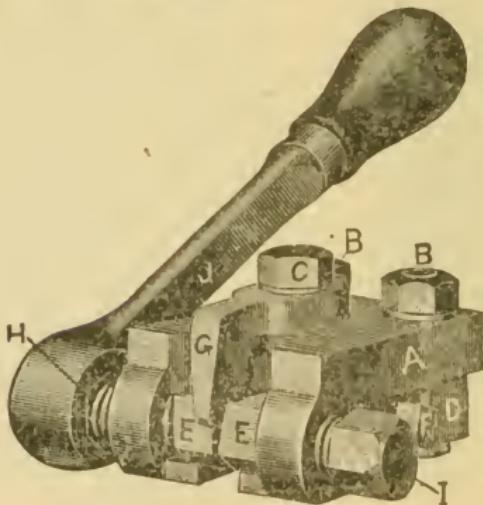
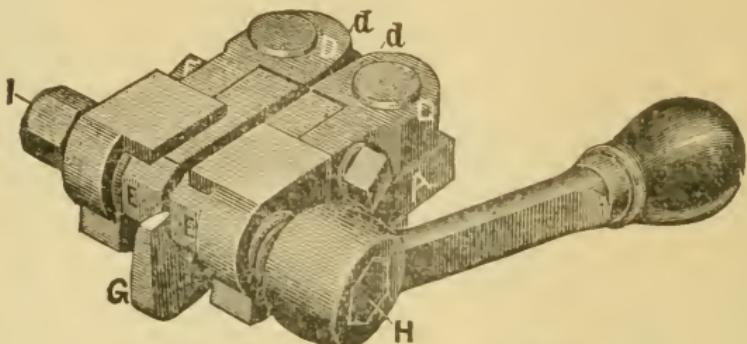
Price .....	Net, \$30 00
Two Dies go with each Swage.	
Extra Dies for Long Saw Swage.	
No. 3 Die, for Gang Saws 9 to 13 gauge .....	\$0 75
No. 5 Die, for Band and Gang Saws, 16 to 18 gauge .....	75
No. 6 Die, for Band and Gang Saws, 14 to 16 gauge .....	75
No. 7 Die, for Band Saws, 17 to 19 gauge .....	75
No. 8 Die, for Band Saws, 19 gauge and thinner.....	75
In ordering state whether for Circular or Long Saws, gauge of saw and shape of teeth.	

### **FOR CIRCULAR SAWS.**

Price .....	Net, \$35 00
Two Dies go with each Swage.	
Extra Dies for Circular Saw Swage.	
No. 1 Die, for Circular Saws, 6 and 7 gauge.....	\$1 00
No. 2 Die, for Circular Saws, 8 9 and 10 gauge .....	1 00
No. 4 Die, for Circular Saws, 10 to 13 gauge.....	75
No. 6 Die, for Circular Saws, 14 to 16 gauge .....	75

## THE PRIBNOW PATENT SWAGE SHAPER.

PRICE.....\$25.00.



In ordering the Swage Shaper be particular to specify gauge of saw and give shape of teeth in saw.

This device is adapted to give perfect and uniform shape to the points of teeth on Band and Gang Saws. It compresses the point of the tooth, making it more durable, and at the same time giving it that form which affords the most perfect clearance and economy of power and lumber.

The advantages to be obtained by the use of the PRIBNOW SHAPER on Band and Gang Saws are obvious. It is the invention of an expert, and has the endorsement of experts and users of Band and Gang Saws everywhere.

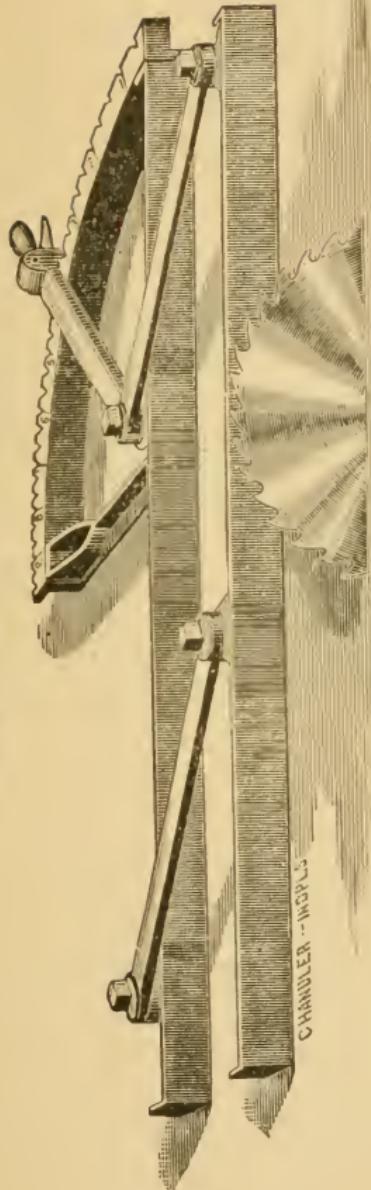
Large Shaper takes saws up to 17 gauge.

Small Shaper takes saws 17 gauge and thinner.

**PRIBNOW PATENT COMBINED SWAGE AND SHAPER, \$125.00.**

## HAMLET DIMENSION GAUGE.

QUICK, POSITIVE, ACCURATE.



### CUT REPRESENTS RIGHT-HAND GAUGE.

Price.....\$8.00  
Dimensions Lumber from  $\frac{1}{8}$  to 9 Inches.

The above cut represents a patent device, of which we are sole manufacturers. No argument is needed to convince sawyers and practical men of the value of such an instrument. Previous to the introduction of this gauge, sawyers were greatly inconvenienced by the want of some attachment to the saw table by which the dimension of lumber could be quickly and accurately gauged, and much valuable time was lost in the adjustment of the old-fashioned wooden gauge operated by screws. The inventor, being a practical man in such work, realized the necessity of such an improvement over the old methods, and this gauge is the result of his thought and experience. As will be seen in the illustration, the gauge permits of variations ranging from  $\frac{1}{8}$  to 9 inches. It is substantially constructed—those parts subject to strain being made of wrought iron—and it can not get out of order. In ordering, state whether Right or Left-Hand Gauge is wanted.

## ATKINS' PATENT COMBINED CIRCULAR SAW-GUIDE AND ROUNDER.

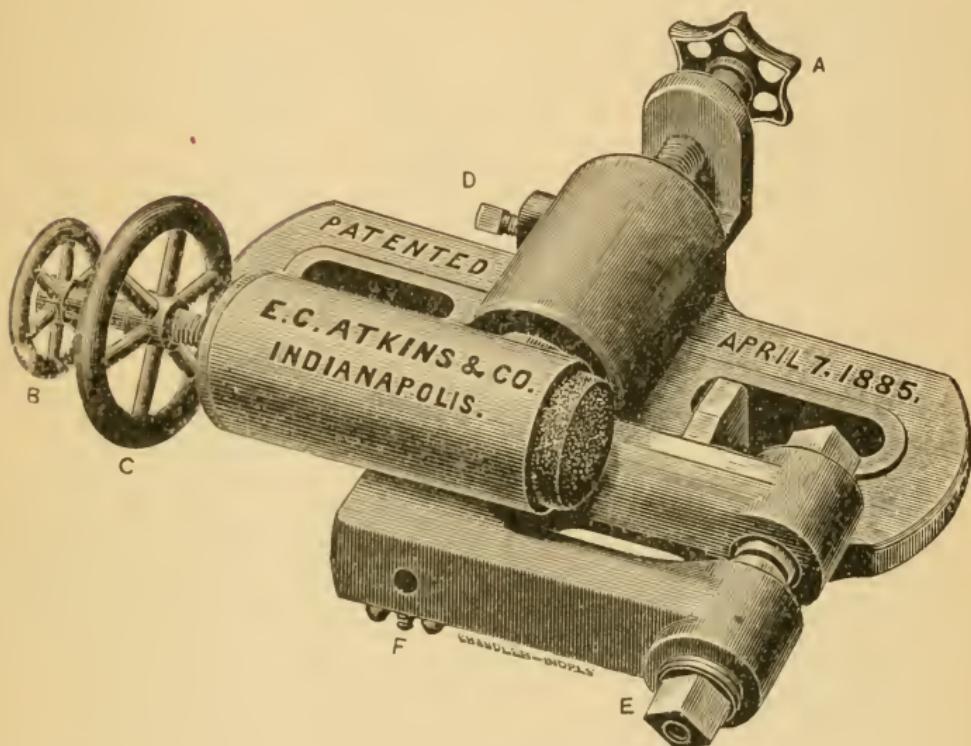
### THE GUIDE.

This new invention, used simply as a saw-guide, has advantages which are possessed by no other guide. A glance at the accompanying engraving will make this fact apparent to every practical saw-mill man. Guide is adjustable and reversible. If the guide-pins (E) are set at proper distance apart to admit the rotation of the saw, the adjustment is easily accomplished without danger to the operator while the saw is in motion. Loosen the set-screw (D) and turn the hand-wheel (A) in the direction required until the saw has the proper lead. Every sawyer will appreciate the practical value of this feature of our guide, as the adjustment of saw-guides—often necessary or desirable to change the lead of the saw—has heretofore been attended with more or less danger, or accomplished with considerable inconvenience and loss of time by the stoppage of the mill. Being reversible, our guide may be used on a right or left-handed mill, or turned back to permit the removal of the saw from the arbor without displacing the guide. Loosen the set-screw (D) and turn back the arms of the guide, or reverse them as is desired. In the sleeve enclosing the shank of the guide, is inserted the set-screw (D), which fits into a groove on either side of the shank, and which is employed to hold the arms of the guide rigid when turned either to right or left, preventing them from turning over whenever the motion of the saw is reversed. When the guide is in use, the set-screw (D) should be set tight.

### THE ROUNDER.

The "ROUNDER" or "JOINTER" is entirely new and original, and its attachment to a saw-guide a novel and valuable feature. When not in use, detach the rounder by using the thumb-nut (F). Saw teeth frequently require jointing, and no device has ever been constructed that will "round up" a circular saw so perfectly, effectually and conveniently as that we have now introduced in combination with our saw-guide. Whenever it is desirable to joint the teeth of a saw, the emery block is brought into contact with the rapidly revolving saw by means of the hand-wheel (C) to which the emery block is attached. During the operation the attendant will turn the hand-wheel (B), thereby rotating the emery block so as to present a constantly changing surface for action on the saw teeth, and wear the face evenly. The saw is thus made perfectly round and all ready for dressing, and every tooth will do its proper duty. The saw will wear longer, cut more lumber, and the lumber will be smoother.

**ATKINS' PATENT COMBINED CIRCULAR SAW GUIDE  
AND ROUNDER.**



**PRICES.**

**NO. 1, FOR ORDINARY MILLS.**

Guide, without Rounter .....	\$6 00
Combined Guide and Rounter.....	9 00

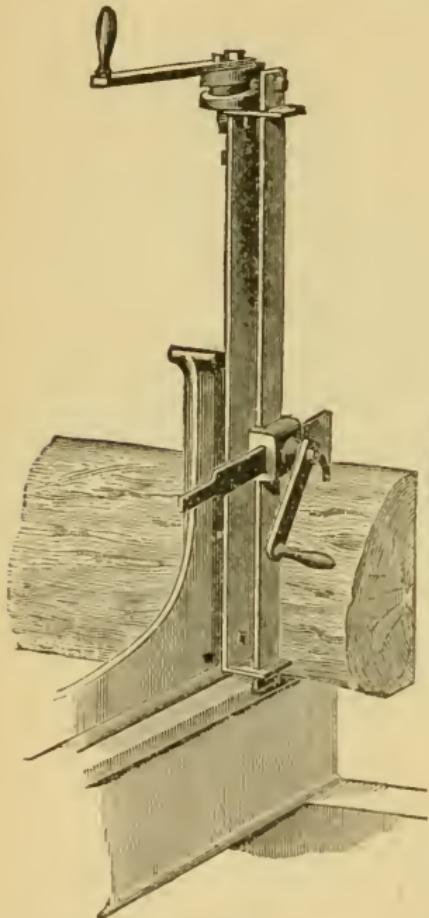
**NO. 2, FOR HEAVY WORK.**

Guide, without Rounter.....	\$10 00
Combined Guide and Rounter.....	13 00

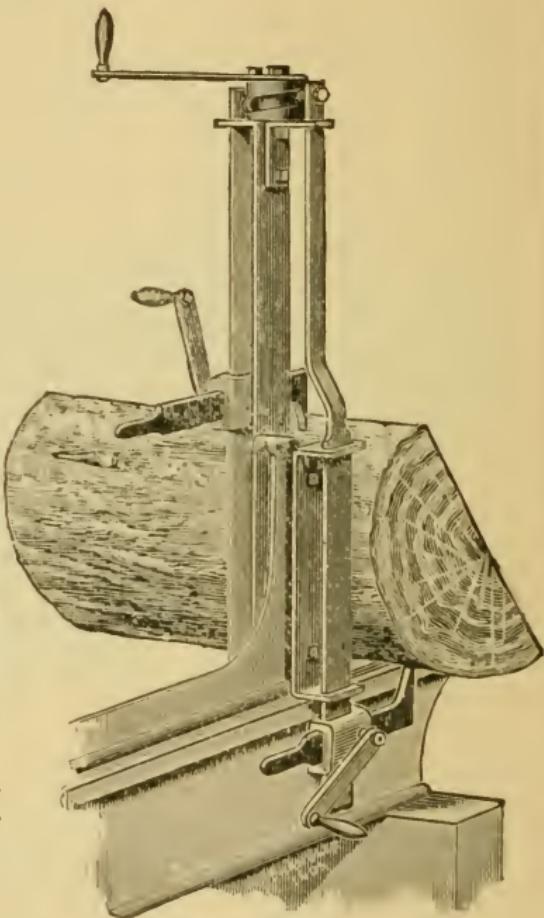
## ATKINS' PATENT SAW MILL DOGS.

**RAPIDITY AND SAFETY IN OPERATING, SIMPLICITY, STRENGTH,  
DURABILITY AND ECONOMY.**

Patented Oct. 18, 1887.



**SINGLE.**



**DUPLEX.**

Single, price per pair.....	\$30.00
Duplex, price per pair.....	50.00

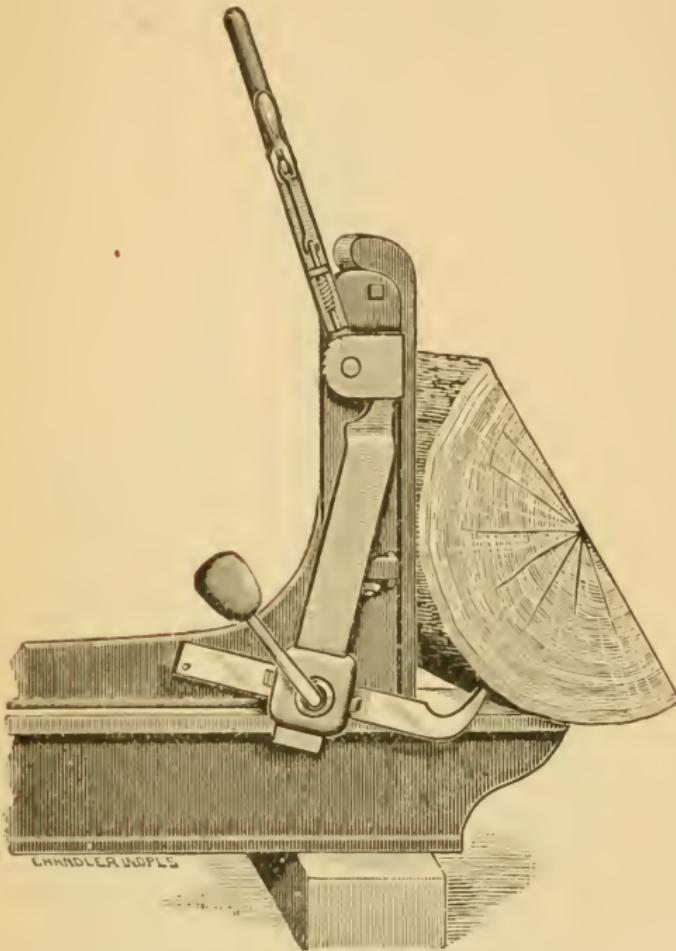
### DIRECTIONS.

To attach to any mill, drill two nine-sixteenth ( $\frac{9}{16}$ ) holes in the standard or knee and bolt on the dog, as shown in cut. The dog should set back from the face of the knee far enough to allow it to pass the bur or nut on the top saw when holding the last piece—or one inch on the carriage. The bottom of the dog should be two inches above the top of the head-block.

In ordering the Atkins Duplex Dog, give the exact dimension of knee to head-block; make a paper pattern of knee, full size, with impression of holes and thickness of knee four inches back from its face; also give the height and width of head-block.

**ATKINS' INDEPENDENT UNDER DOG.**

(Patented April 29, 1890.)

**FOR QUARTER SAWING.**

Can be attached to any mill and used in connection with the upper dogs in use on the mill.

The Atkins Under Dog is so constructed that it will dog under a square surface and not hit the nut on the mandrel, and will pass over set rod and not interfere in opening the head blocks.

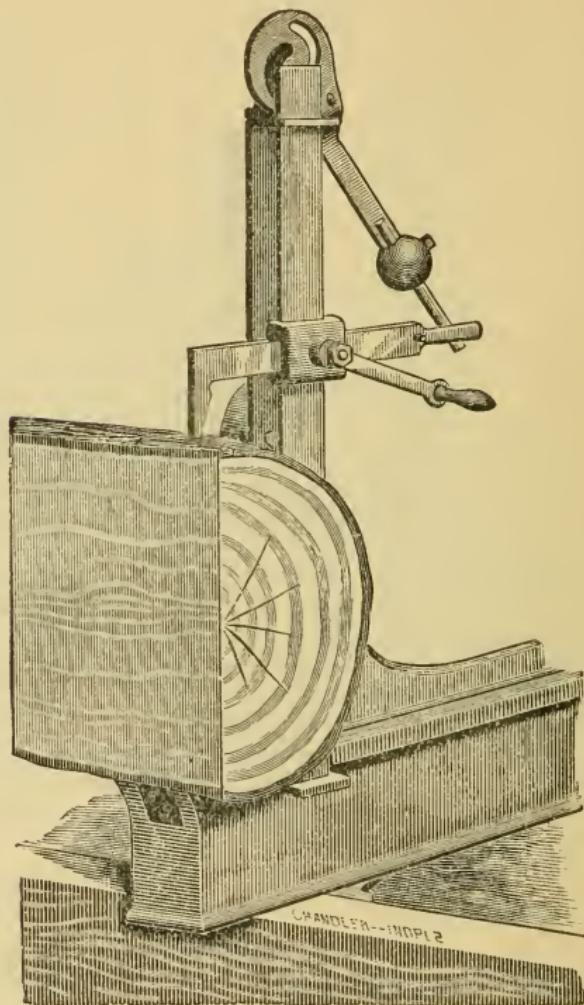
It has fourteen inches travel up and down, giving sufficient capacity for holding logs firmly, avoiding slipping and getting away; and, if required, can lift a knotty or crooked log up so it will pass over the mandrel without turning or rubbing.

It can be used with any upper dog, and with the upper dog makes a good double dog for quarter sawing.

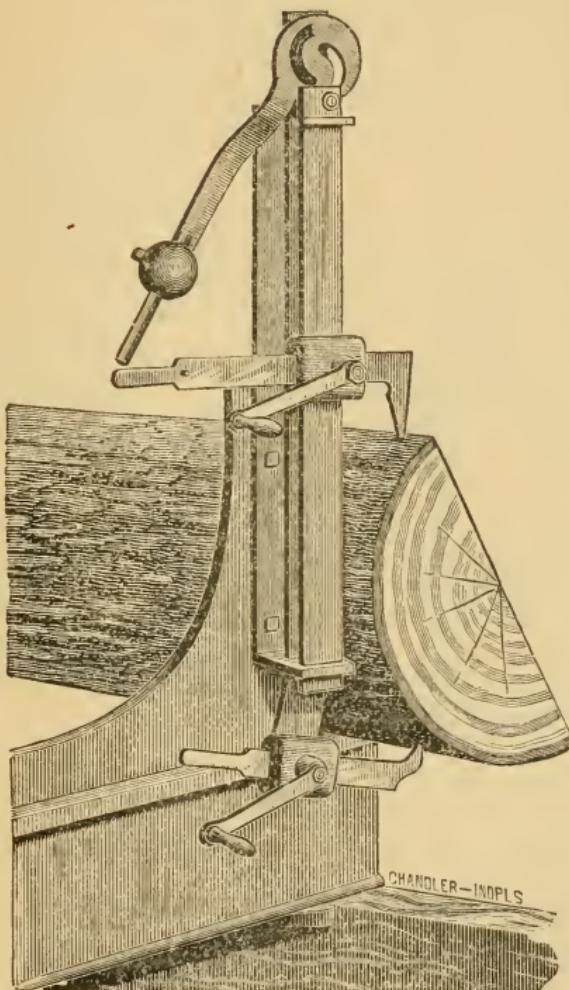
The Atkins Under Dog is simple and durable in construction, convenient and easy of operation, and holds the log fast.

**THE DOG FOR QUARTER SAWING.**

Price, per pair.....	\$25.00
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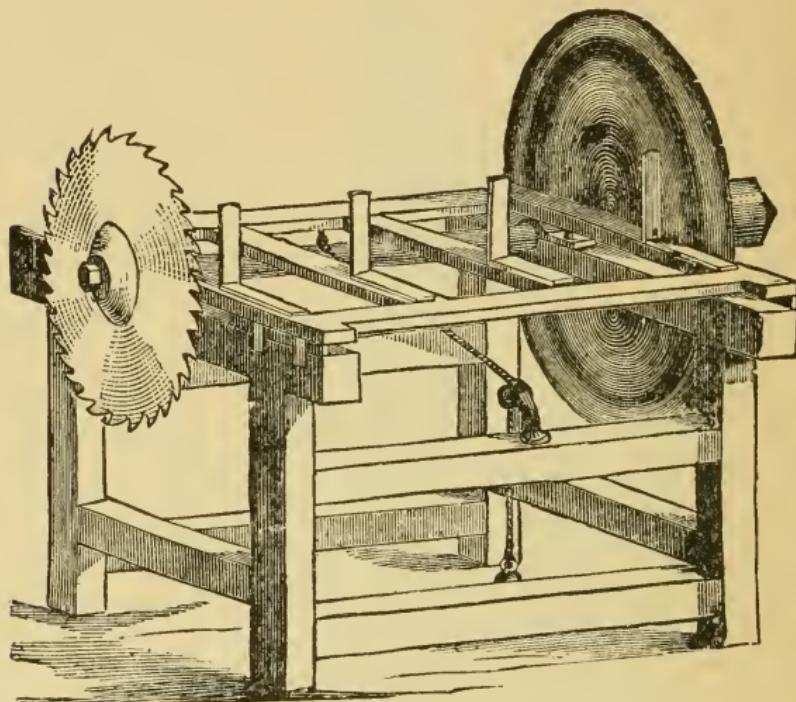
**BUCK SAW MILL DOGS.****SINGLE.**

Price, per Pair..... \$30 00

**BUCK SAW MILL DOG.****DUPLEX.**

Price, per Pair ..... \$50 00

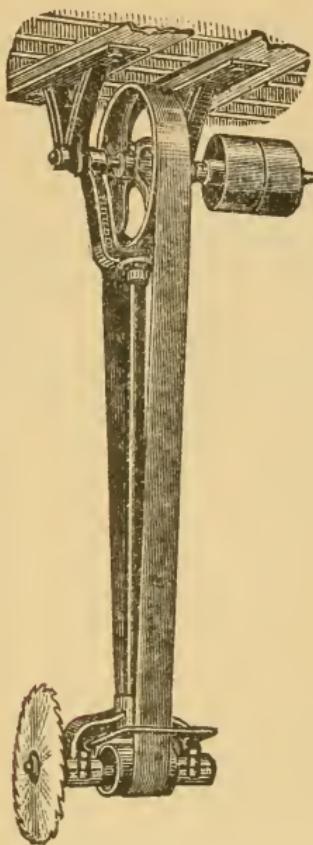
In ordering the BUCK DUPLEX Dog, please give distance from knee to side of head-block; make a paper pattern showing position of holes in knee. This can be done by placing the paper over the holes and rubbing the same with the hand.

**PORTRABLE WOOD SAW AND FRAME.**

The above cut represents a Portable Circular Saw and Table, for sawing fire-wood, etc. With a two-horse railway power or four-horse lever power they will saw from fifteen to twenty cords of wood per day, or just as much as three men can handle. It can also be used to advantage in cutting off fencing stuff or building material of any kind, and is a very useful machine for farmers, railroads and wood-yards.

Size of pulley, 6 x 6 inches, with 24-inch saw.

Price.....	\$40 00
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**IMPROVED SWING CUT-OFF SAW.**

The above cut illustrates our new Swing Cut-off Saw. In our standard size we make the entire drop from ceiling to mandrel eight feet, but can make the drop any length required when ordered. This will be found a strong, simple and durable cut-off.

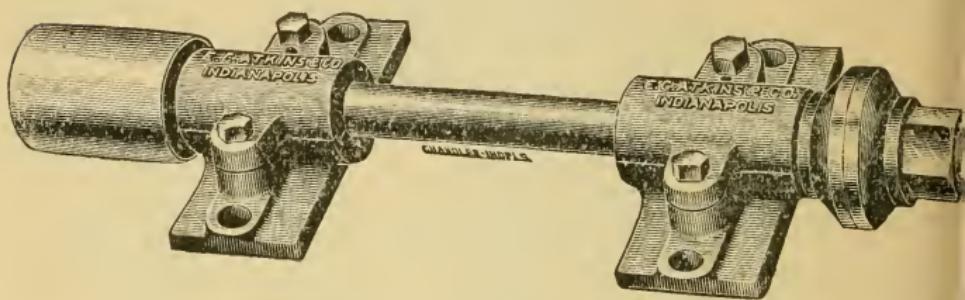
Size of Driving and Loose Pulleys, 10 inches in diameter, 5-inch face.

Size of Large Pulley for driving Saw Mandrel, 24 inches in diameter, 5-inch face.

Size of Pulley on Mandrel, 5 inches in diameter, 5-inch face.  
Revolutions required of Saw Mandrel, 1,800 per minute.

Price, with 20-inch Saw.....\$50 00

Price does not include belt.

**CIRCULAR SAW MANDRELS.****PULLEY OUTSIDE BOXES.****CAST-STEEL. SELF-OILING BOXES.**

We fill all orders for Mandrels with pulley outside of boxes, unless otherwise ordered. Price does not include saw.

**PRICE-LIST.**

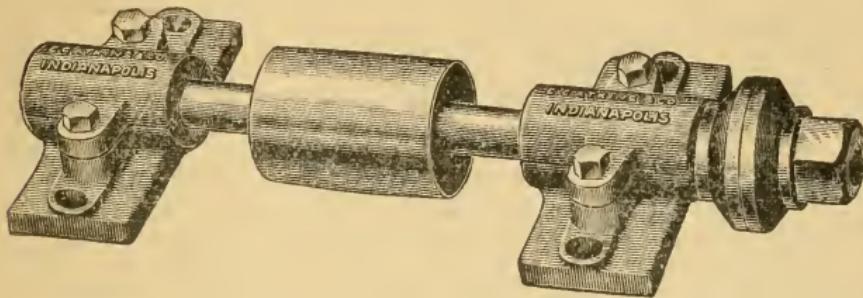
Number.	Extreme Length. Inches.	Diameter of Arbor. Inches.	Diameter of Pulley. Inches.	Face of Pulley. Inches.	Diameter of Collars. Inches.	Size of Hole in Saw. Inches.	Size of Saw. Inches.	Price, Each.
1	16 $\frac{1}{2}$	1 $\frac{1}{6}$	3	3	3	1	6 to 12	\$8 00
2	19	1 $\frac{1}{6}$	3	3 $\frac{1}{2}$	3	1	14 to 18	9 00
3	21 $\frac{1}{2}$	1 $\frac{3}{6}$	3	4	3 $\frac{1}{2}$	1 $\frac{1}{8}$	20 to 24	9 50
4	24	1 $\frac{3}{6}$	3 $\frac{1}{2}$	4 $\frac{1}{2}$	3 $\frac{1}{2}$	1 $\frac{1}{8}$	26 to 28	11 25
5	26	1 $\frac{5}{6}$	4	5	4	1 $\frac{1}{4}$	30 to 32	12 50
6	28	1 $\frac{5}{6}$	4 $\frac{1}{2}$	5 $\frac{1}{2}$	4	1 $\frac{1}{4}$	34 to 36	14 00
7	30 $\frac{1}{2}$	1 $\frac{7}{6}$	5	6	4 $\frac{1}{2}$	1 $\frac{3}{8}$	36	15 00
8	33 $\frac{1}{2}$	1 $\frac{7}{6}$	5 $\frac{1}{2}$	6 $\frac{1}{2}$	4 $\frac{1}{2}$	1 $\frac{3}{8}$	36	18 00
9	37	1 $\frac{9}{6}$	6	7	4 $\frac{1}{2}$	1 $\frac{1}{4}$	38	23 50
10	41	1 $\frac{11}{6}$	7	8	5	1 $\frac{1}{4}$	40	28 00
11	44 $\frac{1}{2}$	1 $\frac{13}{6}$	8	10	5	1 $\frac{1}{4}$	40	33 50
12	48	1 $\frac{15}{6}$	10	10	5	1 $\frac{1}{4}$	42	40 00
13	54	2 $\frac{8}{16}$	12	10	5	2	48	50 00

Our Mandrels are made with pulley on right-hand side, with left hand thread, unless otherwise ordered.

## CIRCULAR SAW MANDRELS.

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**PULLEYS INSIDE BOXES. CAST-STEEL. SELF-OILING BOXES.**

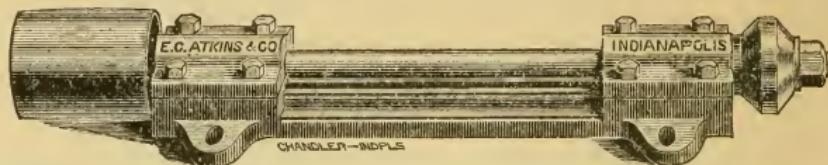


### PRICE-LIST.

(PRICE DOES NOT INCLUDE SAWS.)

Number.	Extreme Length. Inches.	Diameter of Arbor. Inches.	Diameter of Pulley. Inches.	Face of Pulley. Inches.	Diameter of Collars. Inches.	Size of Hole in Saw. Inches.	Size of Saw. Inches.	Price, Each.
1	14	1 $\frac{1}{6}$	3	3	3	1	6 to 12	\$7 50
2	16	1 $\frac{1}{6}$	3	3 $\frac{1}{2}$	3	1	14 to 18	8 50
3	18	1 $\frac{3}{6}$	3	4	3 $\frac{1}{2}$	1 $\frac{1}{8}$	20 to 24	9 00
4	20	1 $\frac{3}{6}$	3 $\frac{1}{2}$	4 $\frac{1}{2}$	3 $\frac{1}{2}$	1 $\frac{1}{8}$	26 to 28	10 50
5	22	1 $\frac{5}{6}$	4	5	4	1 $\frac{1}{4}$	30 to 32	11 50
6	24	1 $\frac{5}{6}$	4 $\frac{1}{2}$	5 $\frac{1}{2}$	4	1 $\frac{1}{4}$	34 to 36	13 00
7	26	1 $\frac{7}{6}$	5	6	4 $\frac{1}{2}$	1 $\frac{3}{8}$	36	14 50
8	28	1 $\frac{7}{6}$	5 $\frac{1}{2}$	6 $\frac{1}{2}$	4 $\frac{1}{2}$	1 $\frac{3}{8}$	36	16 00
9	32	1 $\frac{9}{6}$	6	7	4 $\frac{1}{2}$	1 $\frac{1}{2}$	36	22 00
10	36	1 $\frac{11}{6}$	7	8	5	1 $\frac{1}{2}$	38	26 00

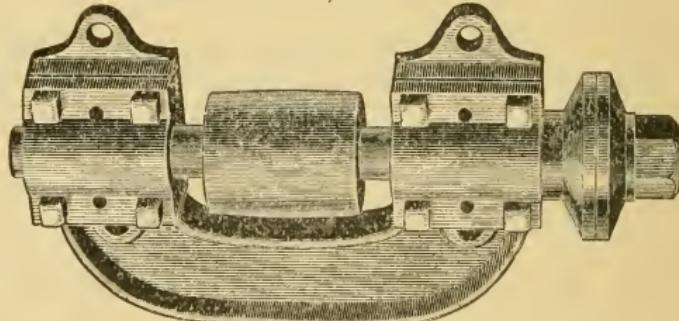
Our Mandrels are made with pulley on right-hand side, with left-hand thread, unless otherwise ordered.

**CIRCULAR SAW MANDRELS.****CAST STEEL, CONNECTED BOXES, AND SELF-OILING.**

Price does not include Saws.

**PRICE-LIST.**

Number.	In <h>1</h>	In <h>2</h>	Inch.	In <h>1</h>	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Size of Saw.	Price, each.
1	23 $\frac{1}{2}$	17	13 $\frac{3}{4}$	1 $\frac{5}{8}$	3	4	3	7 $\frac{1}{8}$	4 to 10	\$9 00		
2	26 $\frac{1}{2}$	19	14 $\frac{1}{2}$	1 $\frac{1}{8}$	3 $\frac{1}{2}$	4 $\frac{1}{2}$	3	1	12 to 14	11 00		
3	28 $\frac{3}{4}$	20 $\frac{1}{2}$	15 $\frac{3}{4}$	1 $\frac{3}{8}$	4	5	3 $\frac{1}{2}$	1 $\frac{1}{8}$	16 to 18	13 25		
4	30 $\frac{1}{2}$	22	16 $\frac{1}{2}$	1 $\frac{1}{8}$	4 $\frac{1}{2}$	5 $\frac{1}{2}$	3 $\frac{1}{2}$	1 $\frac{1}{4}$	:0 to 24	15 50		
5	33 $\frac{1}{2}$	24	19	1 $\frac{7}{8}$	5	6	4	1 $\frac{3}{8}$	26 to 28	17 75		
6	36 $\frac{1}{2}$	26	20 $\frac{3}{4}$	1 $\frac{9}{16}$	6	7	4 $\frac{1}{2}$	1 $\frac{1}{2}$	30	10 00		

**YOKE MANDRELS.****CAST STEEL, SELF-OILING.**

Price does not include Saws.

**PRICE-LIST.**

Number.	Out to Out Boxes.	Diameter of Arbor.	PULLEY.		Size of Collars.	Size Hole in Saw.	Inch.	Inch.	Size of Saw.	Price, each.
			Diameter	Face.						
1	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	7 $\frac{1}{8}$	6	\$9 00	
2	10	1 $\frac{5}{8}$	2 $\frac{1}{2}$	3	3	3	7 $\frac{1}{8}$	8 to 10	11 00	
3	14	1 $\frac{5}{8}$	3	4	3	3	7 $\frac{1}{8}$	12 to 14	12 50	
4	16	1 $\frac{1}{8}$	3 $\frac{1}{2}$	4 $\frac{1}{2}$	3	3	1	16 to 18	14 50	
5	18	1 $\frac{3}{8}$	4	5	3 $\frac{1}{2}$	3 $\frac{1}{2}$	1 $\frac{1}{8}$	20 to 24	16 00	
6	20	1 $\frac{5}{8}$	4 $\frac{1}{2}$	5 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$	1 $\frac{1}{4}$	26 to 28	18 00	
7	22	1 $\frac{7}{8}$	5	6	4	4	1 $\frac{3}{8}$	30 to 36	1 $\frac{1}{2}$	
7	24	1 $\frac{9}{16}$	6	7	4 $\frac{1}{2}$	4 $\frac{1}{2}$				

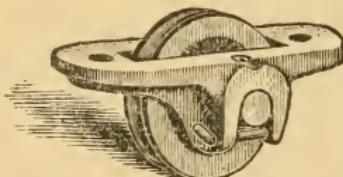
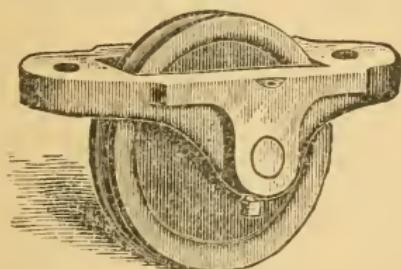
## SAW-MILL CARRIAGE TRUCKS.

A SET CONSISTS OF ONE AXLE AND TWO WHEELS.

Wheels. Diameter, Inches.	Axle. Inches.	Track. Inches.	PRICE, PER SET.	
			Open Bearings.	Patent Oil Boxes.
8	1 $\frac{1}{2}$	50	\$7 50	\$8 00
10	1 $\frac{3}{4}$	50	10 00	11 00
10	2	56	13 00	15 00

These wheels are turned and heavy, one wheel grooved and shrunk on axle, the other flat and loose on axle.

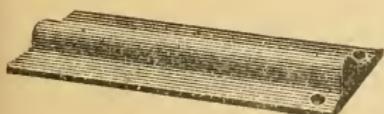
## SAW-MILL CARRIAGE WHEELS, WITH CHAIRS.



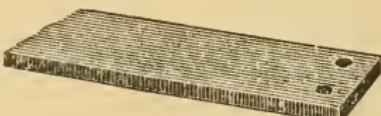
5-inch diameter, one grooved, one flat, per pair ..... \$3 00  
7-inch diameter, one grooved, one flat, per pair..... 6 00

The 7-inch wheels are finished and fitted with steel axle pins.

### V TRACK.



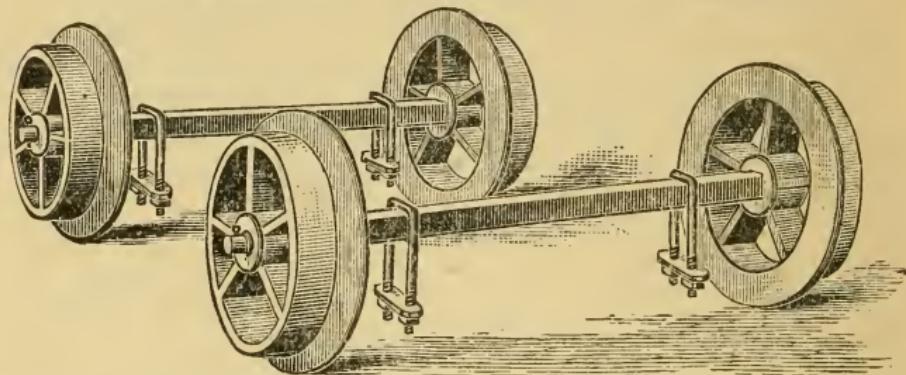
### FLAT TRACK.



V track, 2-inch, price, per foot..... \$0 15  
Flat track, 2-inch, price, per foot..... 12  
Flat track, 1 $\frac{1}{4}$ -inch, price, per foot ..... 9

### T RAILS.

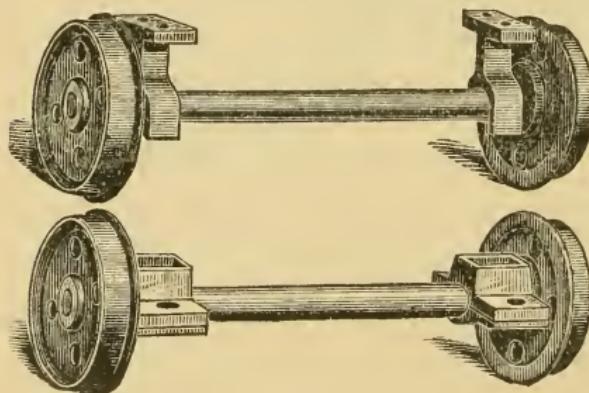
Rails, 12, 16 and 20 pounds, furnished at lowest market prices.

**LUMBER TRUCKS WITH STIRRUPS.****SET CONSISTS OF TWO AXLES AND FOUR WHEELS.**

Wheels, Diām. Inches.	Face. Inches.	Axel. Inches.	Track. Inches.	Price Per Set.
16	2 $\frac{3}{4}$	1 $\frac{1}{2}$	30	\$20 00
18	2 $\frac{3}{4}$	1 $\frac{1}{2}$	30	22 00
20	3	1 $\frac{1}{2}$	30	24 00
22	3	2	36	36 00
24	3	2	36	40 00
26	3	2	38	44 00
28	3	2	42	48 00
30	3	2	42	52 00

**LOG TRUCKS WITH STIRRUPS, HEAVY WHEELS.****SET CONSISTS OF TWO AXLES AND FOUR WHEELS.**

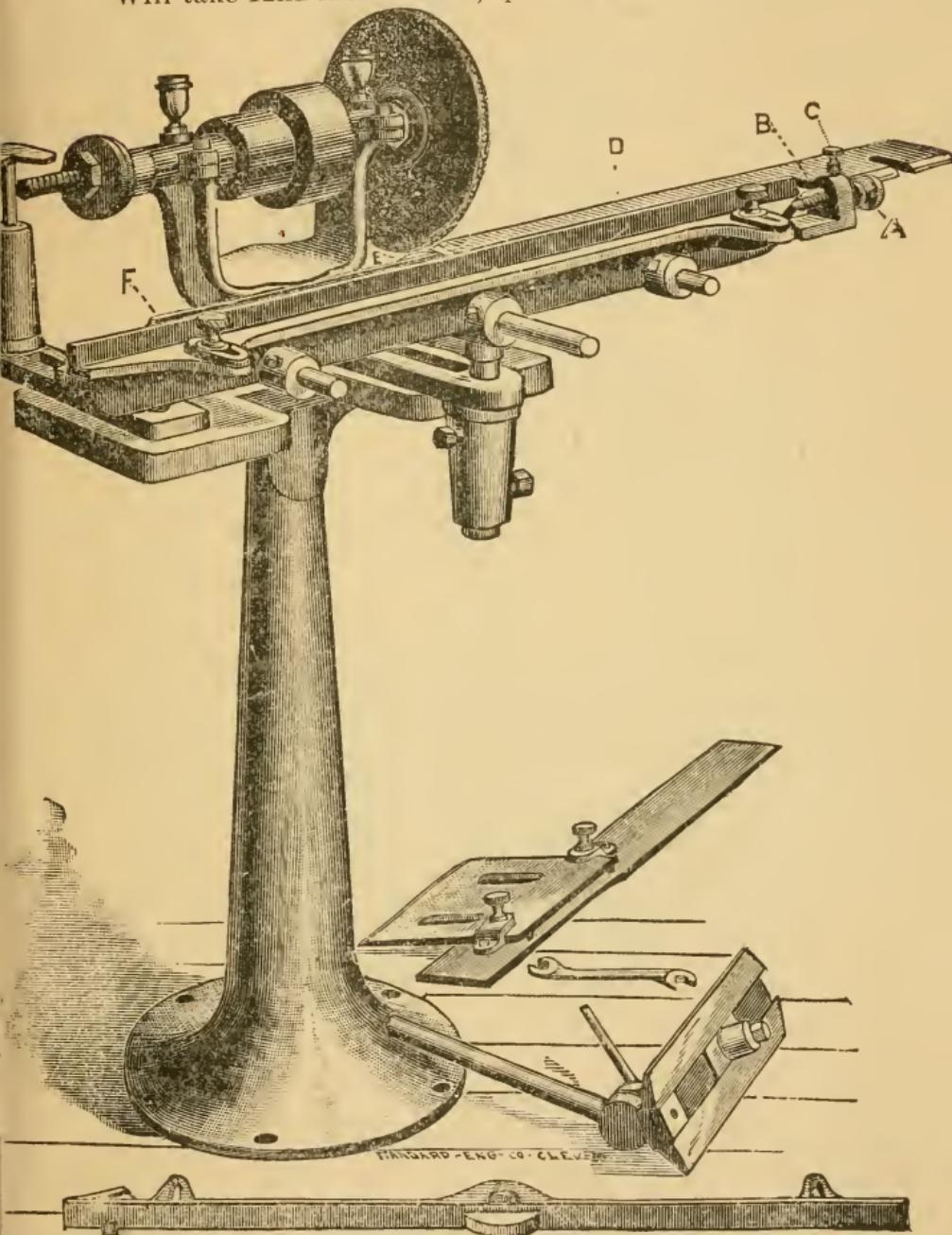
Diameter. Inches.	Face. Inches.	Axle. Inches.	Track. Inches.	Price. Per Set.
10	2 $\frac{1}{4}$	1 $\frac{1}{2}$	36	\$15 00
12	2 $\frac{3}{4}$	1 $\frac{3}{4}$	36	16 00
14	2 $\frac{3}{4}$	1 $\frac{3}{4}$	36	18 00
16	3	1 $\frac{3}{4}$	42	24 00

**EDGER WHEELS, AXLES AND STANDS FOR BOXES.**

Wheels, Diameter. Inches.	Face, Inches.	Axle, Inches.	Track, Inches.	Price, Each.
2	6 $\frac{5}{8}$	5 $\frac{5}{8}$	14	\$1 50
3	8 $\frac{5}{8}$	7 $\frac{5}{8}$	14	1 75
4	9 $\frac{5}{8}$	8 $\frac{5}{8}$	14	2 00

**THE VARIETY EMERY GRINDER.**

PATENTED FEB. 9, 1886.

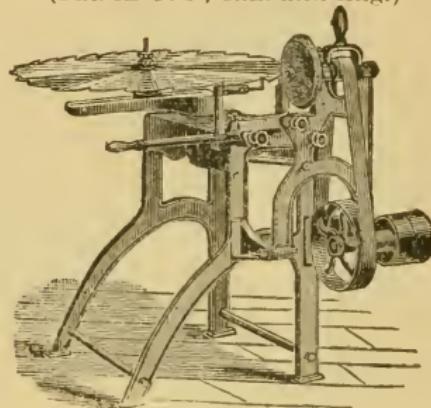
Will take 12x2 inch Wheels,  $\frac{3}{4}$  inch Mandrel Hole.

HARDING-ENG. CO. CLEVELAND

Price of Machine only, without Emery Wheel .....	\$50 00
Countershaft, extra.....	10 00
Wheel Gauge, extra .....	5 00
Saw Gummer, extra .....	5 00

**ROGERS' SAW FILER AND GUMMER.**

(Pat. in U. S., Can. and Eng.)

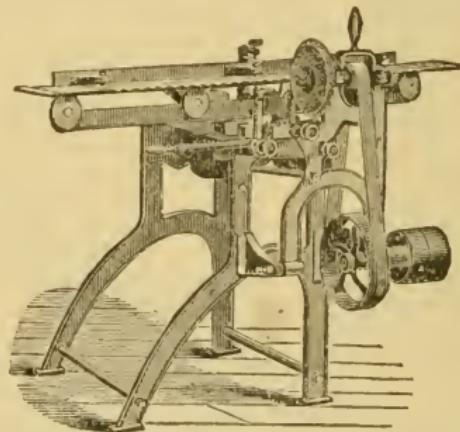


Set for Rip Saws.

**NO. 3—FOR SAWS FROM 8 TO 72 IN. DIAM.**

No. 3 takes saws 8 to 72 in. diam., cross-cut or rip, and does small saws equally as well as No. 2. Nos. 2 and 3 can be provided with an attachment for filing straight gang saws.

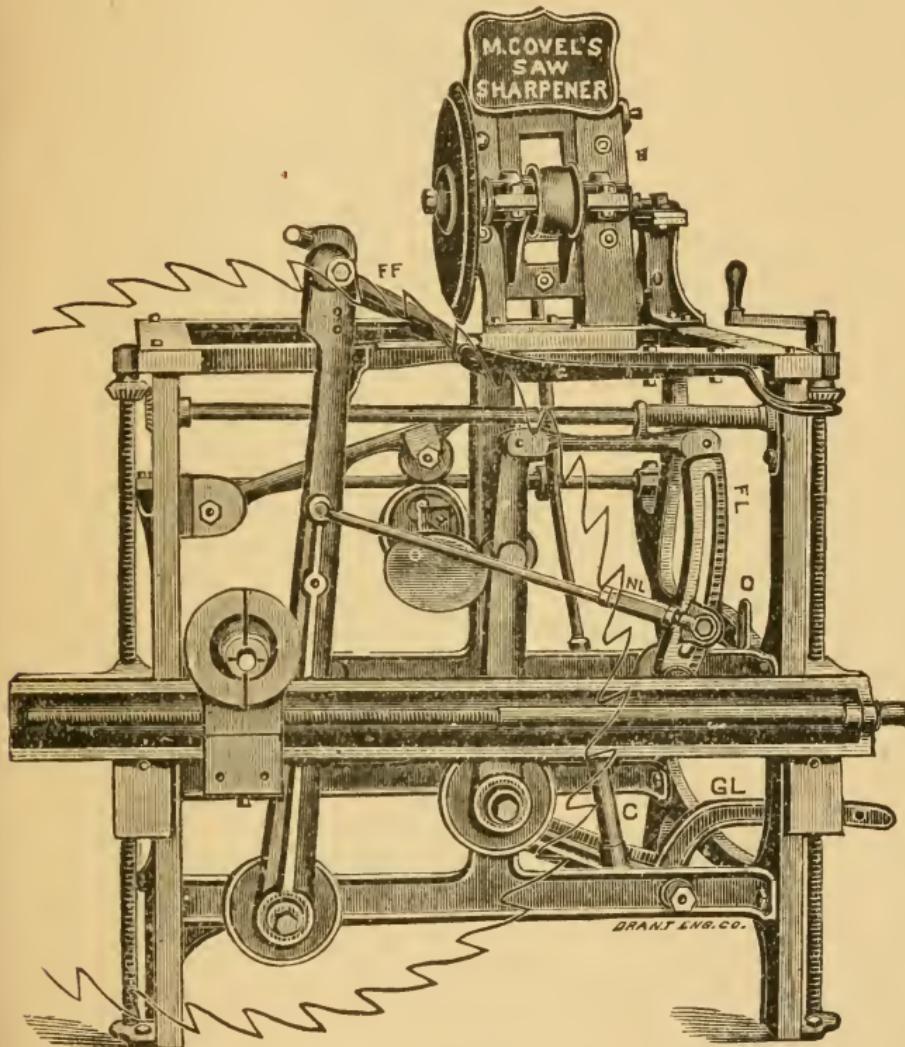
The above illustration shows the No. 3 Gummer.

**NO. 3—WITH GANG-SAW ATTACHMENT.****PRICES ROGERS' GUMMERS.**

No. 1, Circular Saws, 6 to 40 in. diameter.....	\$50 00 net
No. 2, " " 8 to 48 " " .....	65 00 "
No. 3, " " 8 to 72 " " .....	75 00 "
No. 4, " " .....	25 00 "

Three emery wheels are furnished with Nos. 1, 2 and 3.

One emery wheel is furnished with No. 4.

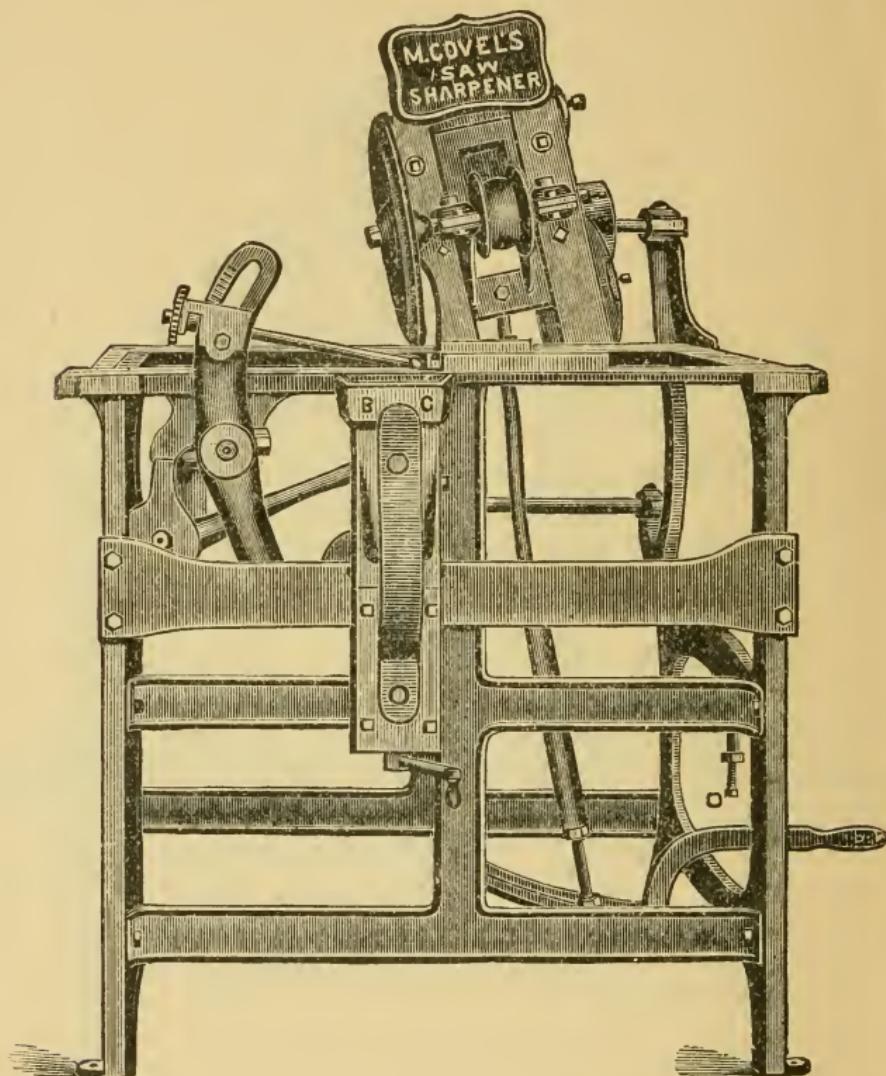
**COVEL'S IMPROVED AUTOMATIC SHARPENER FOR  
CIRCULAR RIP SAWS, FROM 8 TO 72 INCHES.****CUT NO. 1.**

The above is a correct view of the different parts as they are now made, showing the operating parts and the letters to be found on each piece.

Full instructions will accompany each machine as to operation and adjustment.

Price, \$175. Net cash 30 days.

## COVEL'S IMPROVED AUTOMATIC BAND-SAW SHARPENER.



**CUT NO. 3.**

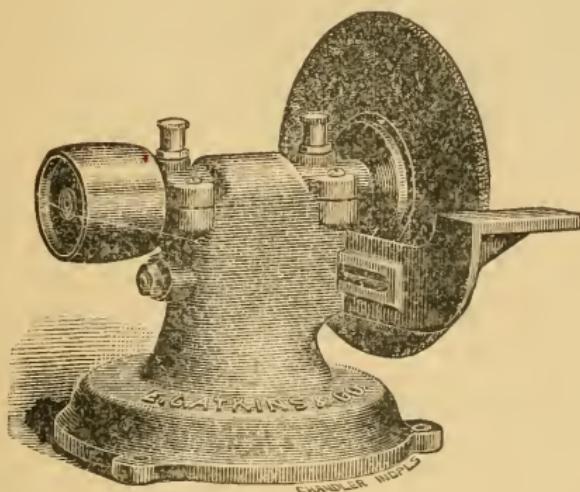
The above illustrates the Band Machine as now made.

One very important feature of this machine is that the emery wheel can be adjusted so as to give all the hook to the tooth that may be wished, and the saw carried on a level to the sharpener.

A set of pulleys complete is furnished with this machine for the support of the saw, or a double feed, either for right or left hand saws, as desired.

The saw-rest and clamp is an entirely new device, and is the most complete and perfect working one in use.

Price for complete rig.....	\$200 00	Net cash 30 days.
Price of Machine.....	175 00	" " " "

**EMERY WHEEL SAW GUMMERS.****AA GUMMER.**

Pulley diameter 3 inches; face  $2\frac{3}{8}$  inches; carry wheel 10 inches diameter,  $1\frac{1}{4}$  inch face.

Price AA Gummers, each ..... \$8 00

Emery Wheels extra.

**AAA GUMMERS.**

Same pattern as AA, illustrated above. Larger and for heavier work.

Pulley diameter,  $3\frac{1}{4}$  inches; face,  $2\frac{1}{2}$  inches; carry wheel,  $14 \times 1\frac{1}{2}$  inches.

Price AAA Gummer, each ..... \$12 00

Emery Wheels extra.

## EMERY WHEELS.

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Grade No. 1 is very soft, and No. 6 very hard wheels, and are seldom called for.

**GRADE 1 TO 2.**—Light surface or machine grinding, light tool grinding, etc.

**GRADE 2½.**—Automatic knife grinding, etc.; light tool grinding, etc.

**GRADE 2½ TO 3.**—Automatic grinding with water, surface grinding on hard steel, light tools, etc.

**GRADE 3 TO 3½.**—Saw sharpening and gumming on hand or automatic machines, light tool grinding, etc.

**GRADE 3½ TO 4.**—Tool grinding, light general work, soft brass.

**GRADE 4.**—Making and shaping moulding tools, light wrought and malleable iron, steel, brass castings, general work, heavy tool grinding, etc.

**GRADE 4½.**—Medium wrought and malleable iron, steel, light cast iron, heavy brass castings, general work, light stove work, etc.

**GRADE 5.**—Stove work, heavy castings of all kinds, general rough work, etc.

**GRADE 5½ TO 6.**—Hard stove work, very heavy rough grinding on sharp edges, points, etc.

Please remember that the grade of hardness is the essential thing. A little difference in the number or fineness of emery is not important.

If wheels are to be run slower than regular speed, they should be harder than above grades. If run faster, they should be softer. Thin elastic wheels should be run fully up to the speed marked on label.

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## HUNTINGTON EMERY WHEEL DRESSER.

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For turning, shaping, sharpening and removing glaze from solid emery wheels, running at full speed.

Price, Huntington Emery Wheel Dresser.....	.....	Each, \$3 00
Cutters, per set.....	.....	" 50

**EMERY WHEELS.****PRICE-LIST.****THICKNESS OF WHEELS IN INCHES.**

Diam. in Inch.	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	$2$	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	Diameter in Inch.	No. Revolu-tions per Min.		
THICKNESS OF WHEELS IN INCHES.																			
1	\$ 25	\$ 30	\$ 30	\$ 30	\$ 35	\$ 35	\$ 40	\$ 40	\$ 45	\$ 45	\$ 50	\$ 55	\$ 60	\$ 65	\$ 70	\$ 70	\$ 80	\$ 90	
$1\frac{1}{2}$	30	35	40	45	50	55	55	55	60	60	65	70	75	80	85	90	100	110	
2	35	45	50	55	65	70	75	80	85	90	95	105	110	115	120	120	130	140	
$2\frac{1}{2}$	40	55	65	80	90	95	105	110	125	125	140	150	170	170	185	185	205	225	
3	50	65	10	125	135	150	150	150	160	160	185	210	245	260	320	320	405	6400	
4	75	95	110	120	140	160	180	205	225	260	300	345	380	460	540	620	620	455	
5	100	120	140	175	210	240	270	300	370	435	500	560	620	700	700	700	700	3800	
6	140	160	175	210	240	270	300	370	435	500	560	620	700	700	700	700	700	3200	
7	185	205	225	250	270	310	360	410	460	540	640	725	800	1050	1150	1260	1260	2700	
8	210	235	260	280	310	360	400	440	500	560	650	750	845	1055	1260	1330	1330	400	
9	250	285	320	360	420	475	540	600	775	900	1075	1200	1500	1800	2100	2100	2100	2150	
10	300	330	360	400	485	570	655	740	900	1070	1250	1400	1740	2075	2410	2410	2410	1350	
12	350	375	400	440	500	570	650	740	900	1070	1250	1400	1740	2075	2410	2410	2410	1600	
14	540	580	620	735	850	960	1070	1300	1520	1760	1950	2240	2800	3200	3550	3550	3550	1400	
16	650	725	800	950	1100	1235	1370	1650	1940	2200	2575	3645	4200	4850	5450	5450	5450	1200	
18	.....	.....	.....	950	1165	1375	1540	1700	2100	2410	2875	3200	3970	4700	5450	6200	6200	6200	1050
20	.....	.....	.....	1100	1325	1550	1775	2000	2500	2900	3350	3800	4700	5600	6550	7450	7450	950	
22	.....	.....	.....	.....	.....	2900	2975	3500	4100	4675	5800	6925	8350	9200	1022	1022	1022	875	
24	.....	.....	.....	.....	4300	5000	5700	7100	8500	9900	11300	12400	14400	17500	20000	20000	20000	800	
26	.....	.....	.....	4900	5800	6500	8200	9800	11400	13000	14400	17500	20000	22600	26000	26000	26000	750	
28	.....	.....	.....	4900	5600	6760	8700	10900	13100	15300	17500	20000	25000	30000	3600	3600	3600	675	
30	.....	.....	.....	4900	5600	6760	8700	10900	13100	15300	17500	20000	25000	30000	3600	3600	3600	550	
32	.....	.....	.....	4900	5600	6760	8700	10900	13100	15300	17500	20000	25000	30000	3600	3600	3600	400	
36	.....	.....	.....	4900	5600	6760	8700	10900	13100	15300	17500	20000	25000	30000	3600	3600	3600	400	
42	.....	.....	.....	4900	5600	6760	8700	10900	13100	15300	17500	20000	25000	30000	3600	3600	3600	400	

**THIN WHEELS.**

We make the Richardson Wheel  $\frac{1}{16}$  inch thick to 8 inch. diameter;  $\frac{1}{8}$  inch to 12 inch. diameter;  $\frac{1}{4}$  inch to 20 inch diameter. Prices same as list of  $\frac{1}{4}$  or  $\frac{1}{2}$  inch thick of same diameter.

Wheels less than 1 inch diameter listed at 1 inch price. Wheels  $\frac{3}{8}$  inch,  $\frac{5}{8}$  inch, etc., in thickness at proportionate prices. In ordering give full particulars of the work you wish to do, and state size of mandrel.

**ACME MACHINE BELTING.**

**EVERY BELT SOLD GUARANTEED TO GIVE SATISFACTION WHEN  
OUR DRESSING AND HOOKS ARE USED.**

**PRICES PER RUNNING FOOT.**

WIDTII.	4-Ply.	5-Ply.	6-Ply.
4 inch .....	\$0 25	\$0 38	\$0 41
4½ inch .....	28	40	43
5 inch .....	30	42	46
5½ inch .....	33	45	49
6 inch ...	35	48	52
7 inch .....	40	52	58
8 inch .....	45	58	65
9 inch .....	52	65	75
10 inch .....	60	73	85
12 inch .....	72	87	1 02
14 inch .....	90	1 10	1 28
16 ineh .....	1 08	1 30	1 54
18 inch .....	1 20	1 48	1 70
20 inch .....	1 38	1 68	1 96
22 inch .....	1 62	1 90	2 22
24 inch .....	1 94	2 15	2 50

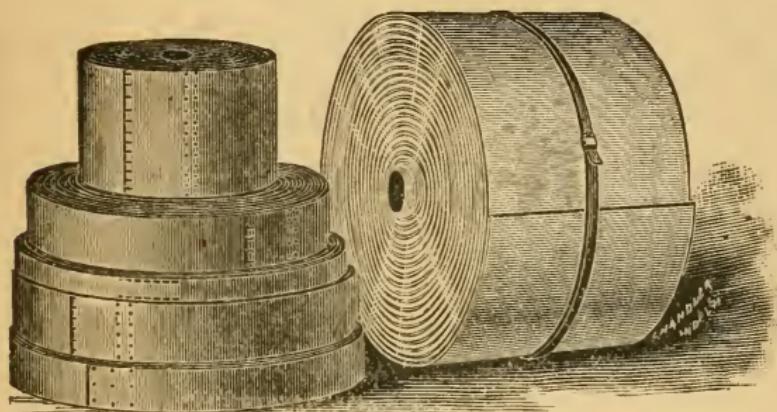
**CAUTION.**

When ordering belting, give full length, as belts will not stretch. Do not deduct from measure anything for stretch. In using dressing put on enough to moisten the surface of the belt next to pulley.

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**THE COLOR OF ACME BELT IS REDDISH BROWN.**

**LEATHER BELTING.**  
**PURE OAK, SHORT LAP.**



**PRICE PER RUNNING FOOT:**

1 inch .....	\$0 12	7 inch .....	\$1 08	25 inch .....	\$4 40
1 1/4 " .....	16	8 "	1 24	26 "	4 60
1 1/2 " .....	20	9 "	1 40	27 "	4 80
1 3/4 " .....	24	10 "	1 56	28 "	5 00
2 " .....	28	11 "	1 72	30 "	5 50
2 1/4 " .....	32	12 "	1 88	32 "	6 00
2 1/2 " .....	36	13 "	2 04	34 "	6 50
2 3/4 " .....	40	14 "	2 20	36 "	7 00
3 " .....	44	15 "	2 40	40 "	7 80
3 1/4 " .....	48	16 "	2 60	44 "	8 60
3 1/2 " .....	52	17 "	2 80	48 "	9 40
3 3/4 " .....	56	18 "	3 00	50 "	9 80
4 " .....	60	19 "	3 20	52 "	10 20
4 1/2 " .....	68	20 "	3 40	56 "	11 00
5 " .....	76	21 "	3 60	60 "	11 80
5 1/2 " .....	84	22 "	3 80	64 "	12 60
6 " .....	92	23 "	4 00	68 "	13 40
6 1/2 " .....	1 00	24 "	4 20	72 "	14 40

**ROUND BELTS.**

Solid.	Twist		Twist.
1/8 inch .....	\$0 05	\$0 06	\$0 30
3/16 " .....	07	10	36
1/4 " .....	10	14	46
5/16 " .....	14	18	60
7/16 " .....	18	22	72

Double Belts twice the price of Single.

Intermediate widths at proportionate prices.

**PRICE-LIST OF CUT LACING.**

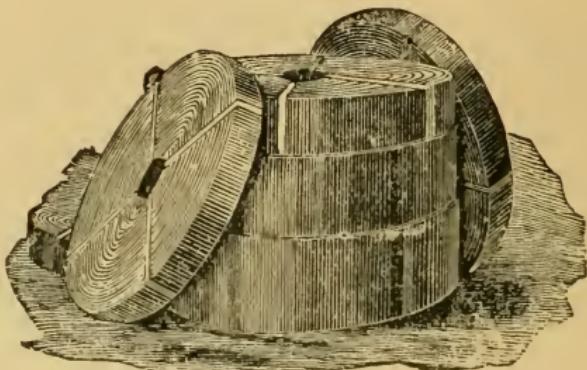
**BOTH RAWHIDE AND TANNED.**

1/4 inch, per bunch .....	\$1 00	1/2 inch, per bunch .....	\$2 00
5/16 " ....."	1 25	5/8 " ....."	2 75
3/8 " ....."	1 50	3/4 " ....."	3 25
7/16 " ....."	1 75		

**PUT UP IN 100 FEET BUNCHES.**

**ELEPHANT RUBBER BELTING.**

(Trade Mark.)

**PRICE-LIST.**

2-Ply, Per Foot.	3-Ply, Per Foot	4-Ply, Per Foot.	5-Ply, Per Foot.	6-Ply, Per Foot.
1 inch..... \$0 07				
1 1/4 "..... 09				
1 1/2 "..... 11				
2 "..... 15	\$0 17	\$0 21		
2 1/2 "..... 18	22	26		
3 "..... 22	26	31		
3 1/2 "..... 26	30	37		
4 "..... 30	34	42		
4 1/2 "..... 33	39	47		
5 "..... 36	43	52		
6 "..... 43	52	62		
7 "..... 51	60	73		
8 "..... 59	70	84	\$1 05	\$1 26
9 "..... 67	80	95	1 18	1 42
10 "..... 75	90	1 07	1 33	1 60
11 "..... 83	1 00	1 18	1 47	1 77
12 "..... 91	1 08	1 30	1 62	1 95
13 "..... 1 00	1 18	1 42	1 77	2 13
14 "..... 1 08	1 28	1 54	1 92	2 31
15 "..... 1 16	1 38	1 66	2 07	2 49
16 "..... 1 25	1 50	1 78	2 22	2 67
18 "..... 1 41	1 70	2 02	2 52	3 03
20 "..... 1 58	1 90	2 26	2 82	3 39
22 "..... 1 76	2 12	2 52	3 15	3 78
24 "..... 1 96	2 36	2 80	3 50	4 20
26 ".....	2 60	3 08	3 85	4 62
28 ".....	2 84	3 36	4 20	5 04
30 ".....	.....	3 64	4 55	5 46

**ENDLESS BELTS MADE TO ORDER.**

Three feet extra will be charged for the splice.

A full roll of belting measures from 300 to 400 feet.

## FILES.

## BEST QUALITY CAST STEEL FILES.

Inch	MILL AND ROUND.			FLAT AND SQUARE.			HALF ROUND AND THREE SQUARE.				
	Bastard	2d Cut	Smooth	Inch	Bastard	2d Cut	Smooth	Inch	Bastard	2d Cut	Sm'h
4	\$1 80	\$2 15	\$2 40	4	\$2 00	\$2 40	\$2 65	4	\$2 50	\$3 00	\$3 30
5	2 00	2 40	2 65	5	2 20	2 60	2 90	5	2 80	3 35	3 70
6	2 25	2 65	2 95	6	2 50	2 95	3 25	6	3 20	3 80	4 15
7	2 55	3 00	3 30	7	2 90	3 40	3 75	7	3 70	4 35	4 80
8	2 90	3 40	3 70	8	3 40	4 00	4 35	8	4 30	5 00	5 50
9	3 30	3 85	4 20	9	4 00	4 70	5 10	9	5 00	5 85	6 40
10	3 80	4 40	4 80	10	4 70	5 45	5 90	10	5 80	6 75	7 30
11	4 50	5 20	5 65	11	5 60	6 50	7 05	11	6 70	7 75	8 45
12	5 40	6 20	6 75	12	6 70	7 70	8 40	12	7 80	9 00	9 75
13	6 50	7 45	8 05	13	8 00	9 15	10 00	13	9 10	10 40	11 25
14	7 80	8 90	9 65	14	9 50	10 90	11 80	14	10 60	12 10	13 10
15	9 30	10 60	11 45	15	11 20	12 75	13 75	15	12 40	14 15	15 25
16	11 00	12 50	13 40	16	13 10	14 85	16 00	16	14 50	16 50	17 70
17	12 90	14 60	15 60	17	15 25	17 25	18 45	17	16 90	19 10	20 50
18	15 10	16 90	18 10	18	17 65	19 75	21 20	18	19 60	22 00	23 50
19	17 60	19 70	21 10	19	20 30	22 75	24 35	19	22 60	25 30	27 10
20	20 40	22 85	24 50	20	23 20	26 00	27 85	20	26 00	29 10	31 20

## EXTRAS.

Mill Double Cut, adv. 1 in.  
Mill Nar. Points, " 1 "  
C. Cut Saw (blunt), " 2 "

## EXTRAS.

Cant Blunt (Double Cut),  
advance 2 inch.

## EXTRAS.

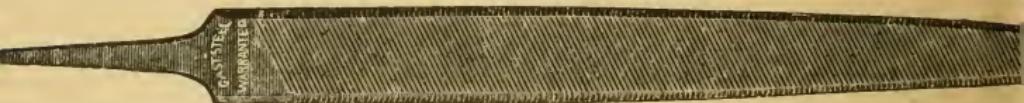
Knife, adv. 1 in.  
II. B. Hlf. Rd bl't, " 2 "  
Cross, (blunt), " 2 "  
Feather Edge, " 2 "

## SAW FILES.

INCH.	3	3½	4	4½	5	5½	6	7
Tapers, Single Cut...	\$1 10	\$1 10	\$1 20	\$1 40	\$1 70	\$2 00	\$2 40	\$3 00
" Double " ...	1 60	1 60	1 75	2 00	2 40	2 75	3 25	4 00
Slim Tapers, Single " ...	1 20	1 20	1 30	1 45	1 70	1 90	2 10	2 50
" Double " ...	1 80	1 80	1 90	2 10	2 40	2 60	2 85	3 30
Pitsaw, Blunt, Single " ...	2 10	2 10	2 20	2 30	2 50	2 80	3 00	3 70
Hooktooth, " " ....	.....	.....	.....	.....	.....	.....	3 60	3 90
INCH.	8	9	10	11	12	13	14	
Tapers, Single Cut...	\$3 80	\$4 60	\$5 70	\$7 20	\$9 00	\$11 00	\$13 20	
" Double " ...	4 95	5 90	7 10	8 80	10 80	12 90	15 20	
Slim Tapers, Single " ...	3 00	3 70	4 50	5 50	6 80	8 30	10 00	
" Double " ...	3 90	4 70	5 60	6 75	8 20	9 75	11 50	
Pitsaw, Blunt, Single " ...	4 30	5 00	5 80	6 70	7 70	.....	.....	
Hooktooth, " " ....	4 40	5 10	6 00	7 10	8 40	.....	.....	

## EXTRAS.

Band Saw, Heavy, Blunt, take Taper Double Cut Price  
" Light, " Slim Taper " " " Taper Points same price.  
Cant Saw, Blunt, Single Cut, Take Pitsaw price.  
Round Gulleting, Round Off, Blunt, Single Cut. Take Hooktooth price.  
Tapers, pointed at both ends (without handles), double the price of Slim  
Tapers of half their length.

**FILES WITH TWO ROUND EDGES.****LIST.**

8-inch.....	\$3 34	10-inch.....	\$4 37
9-inch.....	3 80	12-inch.....	6 21

Per Dozen.

8-inch Stave Files..	.....	\$5 00
8-inch double Stave Files .....	.....	6 20
10-inch double Stave Files .....	.....	8 35
10-inch Planer Knife Files .....	.....	5 35
8-inch Great American Files .....	.....	3 80
9-inch Great American Files .....	.....	4 50

**BABBITT METAL.**

Per Pound.

Atkins' Perfection .....	.....	\$0 25
Anti Friction .....	.....	18
No. 1 .....	.....	13
No. 2 .....	.....	10
No. 3 .....	.....	08
No. 4 .....	.....	06

Put up in 50 pound boxes.

**COTTON WASTE.**

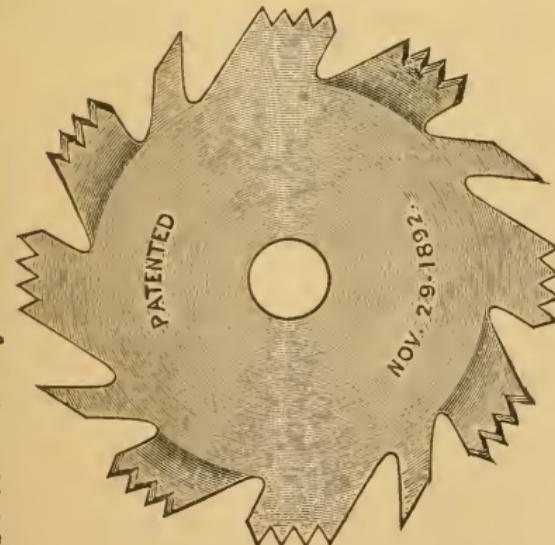
Per Pound.

XXX White .....	.....	\$0 10
X White .....	.....	08
C Colored.....	.....	07½
D Colored .....	.....	06

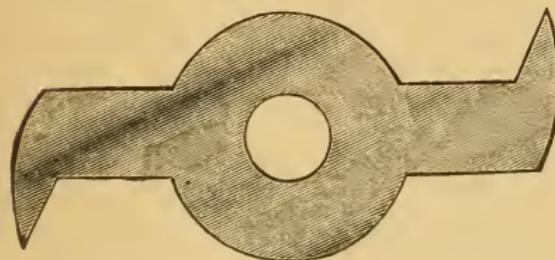
Put up in bales of 50, 100, 500 pounds.

**GROOVER OR DADO HEADS.****HUTHER'S PATENT.**

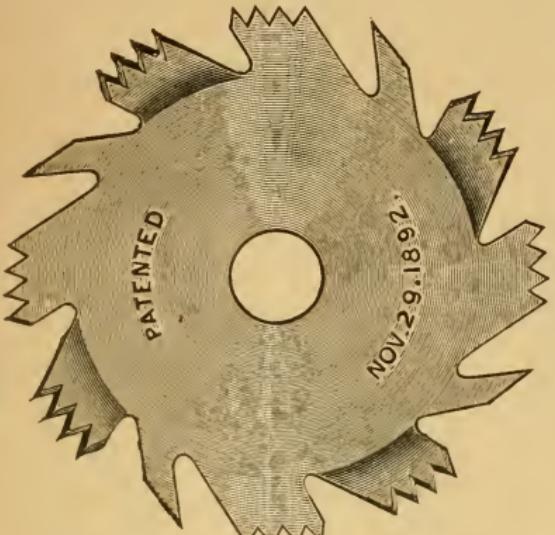
Prices Net—Not Subject to Discount.

**Jointed and Filed, Ready for Use.**

OUTSIDE CUTTER.



INSIDE CUTTER.



OUTSIDE CUTTER.

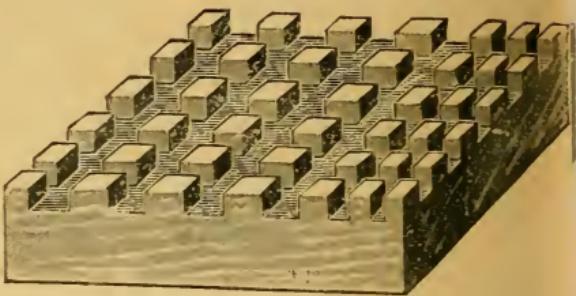
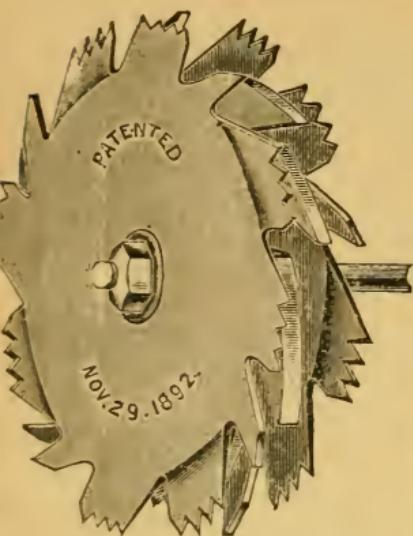
**CAN BE USED ON ANY CIRCULAR SAW MANDREL.**

For cutting any width groove, from  $\frac{1}{8}$  inch to 2 inches or over. This groover consists of two outside saws, each of which is a groover in itself, and as many inside cutters as required. The inside cutters are made  $\frac{1}{8}$  and  $\frac{1}{4}$  inch thick, so that any width groove measurable in sixteenths may be cut. The outside cutters are made  $\frac{1}{8}$  inch thick.

The outside cutters can be used singly, together, or in connection with as many or as few inside cutters as required to cut the necessary width groove.

We will guarantee to sell you the best Dado on the market, and will send on approval to any responsible party, and if not satisfactory in every respect it can be returned at our expense.

## GROOVER OR DADO HEADS.



Will cut a perfect groove with or across the grain

The Groovers are arranged in sets, as follows:

No. 1 Set,	cutting grooves,	$\frac{1}{8}$ , $\frac{1}{4}$ , $\frac{3}{8}$ .
No. 2 "	"	$\frac{1}{8}$ , $\frac{1}{4}$ , $\frac{3}{8}$ , $\frac{1}{2}$ , $\frac{5}{8}$ .
No. 3 "	"	$\frac{1}{8}$ , $\frac{1}{4}$ , $\frac{5}{8}$ , $\frac{7}{8}$ , $\frac{1}{2}$ , $\frac{9}{8}$ , $\frac{5}{8}$ , $\frac{11}{8}$ , $\frac{3}{4}$ .
No. 4 "	"	$\frac{1}{8}$ , $\frac{1}{4}$ , $\frac{5}{8}$ , $\frac{3}{8}$ , $\frac{7}{8}$ , $\frac{1}{2}$ , $\frac{9}{8}$ , $\frac{5}{8}$ , $\frac{11}{8}$ , $\frac{3}{4}$ , $\frac{13}{8}$ , $\frac{7}{8}$ , $\frac{15}{8}$ , 1.
No. 5 "	"	$\frac{1}{8}$ , $\frac{1}{4}$ , $\frac{5}{8}$ , $\frac{3}{8}$ , $\frac{7}{8}$ , $\frac{1}{2}$ , $\frac{9}{8}$ , $\frac{5}{8}$ , $\frac{11}{8}$ , $\frac{3}{4}$ , $\frac{13}{8}$ , $\frac{7}{8}$ , $\frac{15}{8}$ , 1, $1\frac{1}{16}$ , $1\frac{1}{8}$ ,
		$1\frac{3}{16}$ , $1\frac{1}{4}$ , $1\frac{5}{16}$ , $1\frac{3}{8}$ , $1\frac{1}{16}$ , $1\frac{1}{2}$ .
No. 6 "	"	$\frac{1}{8}$ , $\frac{1}{4}$ , $\frac{5}{8}$ , $\frac{3}{8}$ , $\frac{7}{8}$ , $\frac{1}{2}$ , $\frac{9}{8}$ , $\frac{5}{8}$ , $\frac{11}{8}$ , $\frac{3}{4}$ , $\frac{13}{8}$ , $\frac{7}{8}$ , $\frac{15}{8}$ , 1, $1\frac{1}{16}$ , $1\frac{1}{8}$ ,
		$1\frac{3}{16}$ , $1\frac{1}{4}$ , $1\frac{5}{16}$ , $1\frac{3}{8}$ , $1\frac{1}{16}$ , $1\frac{1}{2}$ , $1\frac{9}{16}$ , $1\frac{5}{8}$ , $1\frac{11}{16}$ , $1\frac{3}{4}$ , $1\frac{13}{16}$ , $\frac{7}{8}$ , $2$ .

## PRICE-LIST OF GROOVERS OR DADO HEADS.

	6 in. diam.	7 in. diam.	8 in. diam.	9 in. diam.	10 in. diam.	11 in. diam.	12 in. diam.
No. 1 Set .....	\$5 80	\$6 80	\$7 60	\$8 35	\$9 15	\$9 75	\$10 85
No. 2 Set ..	7 05	8 15	9 05	9 90	10 80	11 60	12 95
No. 3 Set .....	8 65	9 85	10 85	11 90	13 00	13 90	15 45
No. 4 Set .. .	9 90	11 20	12 30	13 45	14 65	15 75	17 55
No. 5 Set .....	12 40	13 90	15 20	16 55	17 95	19 45	21 75
No. 6 Set .....	14 90	16 60	18 10	19 65	21 25	23 15	25 95

In ordering, please state the number of set, diameter of groover and size of hole wanted

Extra inside cutters can be had at any time.



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# World's Columbian Exposition,

CHICAGO, 1893.

Awards on Circular, Cylinder, Band, Gang, Drag,  
Cross-cut and Hand Saws,

For Variety Exhibited, Material, Workmanship and Finish.

AWARD FOR SAW TOOLS.

WRITE FOR PRICES.